

**NOVA** | Northern Virginia  
Community College

**2018-2019**

# CATALOG



# CATALOG

## 2018–2019

---

### **Statement of Non-Discrimination: Equal Opportunity/Affirmative Action Institution**

Northern Virginia Community College does not discriminate on the basis of race, sex, color, national origin, religion, sexual orientation, gender identity, age, political affiliation, disability, or veteran status in its programs and activities. Inquiries regarding the non-discrimination policy may be addressed to: Equal Opportunity Officer, 3926 Pender Drive, Suite 150, Fairfax, VA 22030-0974 at 703.323.3266 or eo@nvcc.edu.

### **Catalog Policy**

Northern Virginia Community College provides its *Catalog*, handbooks, website, and any other printed materials or electronic media for general guidance. The College does not guarantee that the information contained within them, including, but not limited to, the contents of any page that resides under the Domain Name System (DNS) registration of [www.nvcc.edu](http://www.nvcc.edu) is up-to-date, complete, and accurate, and individuals assume any risks associated with relying upon information without checking other credible sources, such as a student's academic advisor. In addition, a student's or prospective student's reliance upon information contained within these sources, or individual program catalogs or handbooks, when making academic decisions does not constitute, and should not be construed as, a contract with the College. Further, the College reserves the right to make changes to any provision or requirement within these sources, as well as changes to any curriculum or program, whether during a student's enrollment or otherwise.

Links or references to other materials or websites provided in the above-referenced sources are also for information purposes only and do not constitute the College's endorsement of products or services referenced.

There may be times when substantive changes are required during the academic year after the *Catalog* has been printed. Such changes are posted to the College website at [www.nvcc.edu/currcatalog](http://www.nvcc.edu/currcatalog).

# ADMINISTRATION

## President of the College

**Scott Ralls, President**

## Administrative Council

**Scott Ralls, Chair**

**Mel Schiavelli**

Dimitrina Dimkova

Steven G. Sachs

George E. Gabriel

Elizabeth K. Weatherly

Steve Partridge

Pamela Hilbert

M. Annette Haggray

Sam A. Hill

Chad Knights

Julie Leidig

Molly Lynch

Nicole Reaves

## Northern Virginia Community College Board

**Rick Pearson, County of Loudoun, Chair**

**Rosie O'Neil, County of Arlington, Vice Chair**

Scott Ralls, Secretary

Kerstin Carlson Le Floch, City of Fairfax

Vacant, City of Falls Church –

New Appointment pending

Jennifer McGarey, County of Fairfax

Todd Rowley, County of Fairfax

Vacant, City of Alexandria – New Appointment pending

Bruce Neilson, County of Fairfax

Alvie Johnson, County of Price William

Zuzana Steen, City of Manassas

Hong Xu, City of Manassas Park

## Virginia Community College System

**Glenn DuBois, Chancellor**

## State Board for Community Colleges

**Eleanor Saslaw, Chair**

Robin Sullenberger, Vice Chair

Yohannes A. Abraham

Carolyn Berkowitz

Nathaniel Bishop

David E. Broder

Darren Conner

Edward Dalrymple, Jr.

Douglas M. Garcia

Susan Tinsley Gooden

William C. Hall, Jr.

Peggy Layne

Joseph Smiddy

Walter Stosch

Molly Ward

## Accreditation

Northern Virginia Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award the associate degree. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033–4097, or call 404–679–4500 for questions about the accreditation of Northern Virginia Community College. For other information about the College, please contact NOVA's Administrative Offices, 4001 Wakefield Chapel Road, Annandale, Virginia 22003–3796 or call 703–323–3000.

Curricula of the College are approved by the College Board and by the State Board for Community Colleges. The two-year associate degree programs are also approved by the State Council of Higher Education for Virginia. Other agencies that accredit or recognize selected NOVA programs include

- Accreditation Commission for Education in Nursing
- Accreditation Council for Occupational Therapy Education
- American Bar Association
- American Culinary Federation
- American Dental Association
- American Veterinary Medical Association – Committee on Veterinary Technician Education and Activities
- Commission on Accreditation of Allied Health Education Programs
- Commission on Accreditation of Educational Programs for Emergency Medical Services Professions
- Commission on Accreditation for Health Informatics and Information Management Education
- Commission on Accreditation in Physical Therapy Education
- Commission on Accreditation for Respiratory Care
- HVAC Excellence (Benchmark of Academic Excellence)
- National Accrediting Agency for Clinical Laboratory Sciences
- National Automotive Technicians Education Foundation
- National Certification Board for Therapeutic Massage & Bodywork
- VA Board of Nursing

# FALL SEMESTER 2018

## Important Dates

**April 2–6:** Advising Week for Fall Semester

**April 2:** NOVAConnect priority registration for continuing students begins for Fall

**May 1:** Open registration for all students begins for Fall

**July 30:** Tuition payment deadline if you register by July 23

NOTE: If you register July 24 or after, you must pay your tuition before 5:00 p.m. the next business day to prevent being dropped from your classes.

**August 9:** Last day to add your name to the Wait List for all classes for First 8-week Session and 16-week Session

**September 3:** Labor Day holiday for students, faculty, and staff. College offices closed.

**October 1:** Last day to apply for Fall graduation

**October 9:** Last day to add your name to the Wait List for Second 8-week Session

**October 9–10:** Non-instructional days. College offices open.

**November 21:** Non-instructional day. No classes. College closes at noon.

**November 22–25:** Thanksgiving holiday. College closed.

## 16-Week Session

**August 22:** Classes begin

**September 11:** Last day to drop with a tuition refund or change to audit (census date)

**October 31:** Last day to withdraw without grade penalty

**December 5–11:** Last week of classes

**December 12–18:** Final exam week

**December 18:** Final exams end

## First 8-Week Session

**August 22:** Classes begin

**August 30:** Last day to drop with a tuition refund or change to audit (census date)

**September 24:** Last day to withdraw without grade penalty

**October 16:** Classes and examinations end

## 14-Week Session

**September 9:** Classes begin

**September 20:** Last day to drop with a tuition refund or change to audit (census date)

**November 6:** Last day to withdraw without grade penalty

**December 18:** Classes and examinations end

## 12-Week Session

**September 19:** Classes begin

**October 6:** Last day to drop with a tuition refund or change to audit (census date)

**September 24:** Last day to withdraw without grade penalty

**October 16:** Classes and examinations end

## 10-Week Session

**August 22:** Classes begin

**October 12:** Last day to drop with a tuition refund or change to audit (census date)

**November 12:** Last day to withdraw without grade penalty

**December 18:** Classes and examinations end

## Second 8-Week Session

**October 17:** Classes begin

**October 26:** Last day to drop with a tuition refund or change to audit (census date)

**November 26:** Last day to withdraw without grade penalty

**December 18:** Classes and examinations end

## Winter Break

**December 22, 2018–January 1, 2019:** Winter break for students, faculty, and staff. College offices closed. NOVAConnect registration only.

*Please check NOVAConnect for start dates and census dates for variable duration (dynamic) sessions.*





## SPRING SEMESTER 2019

### Important Dates

**November 5-9:** Advising Week for Spring Semester

**November 5:** NOVAConnect priority registration for continuing students begins for Spring

**November 12:** Open registration for all students begins for Spring

**December 12:** Tuition payment deadline if you register by December 11

NOTE: If you register December 12 or after, you must pay your tuition before 5:00 p.m. the next business day to prevent being dropped from your classes.

**January 21:** Martin Luther King, Jr., holiday for students, faculty, and staff. College offices closed.

**March 1:** Last day to apply for Spring graduation

### 16-Week Session

**January 12:** Classes begin

**January 29:** Last day to drop with a tuition refund or change to audit (census date)

**March 24:** Last day to withdraw without grade penalty

**April 27–May 3:** Last week of classes

**May 10:** Final exams end

### First 8-Week Session

**January 12:** Classes begin

**January 19:** Last day to drop with a tuition refund or change to audit (census date)

**February 11:** Last day to withdraw without grade penalty

**March 6:** Classes and examinations end

### 14-Week Session

**January 26:** Classes begin

**February 10:** Last day to drop with a tuition refund or change to audit (census date)

**March 30:** Last day to withdraw without grade penalty

**April 27–May 3:** Last week of classes

**May 10:** Final exams end

### 12-Week Session

**February 9:** Classes begin

**February 22:** Last day to drop with a tuition refund or change to audit (census date)

**April 4:** Last day to withdraw without grade penalty

**April 27–May 3:** Last week of classes

**May 10:** Final exams end

### 10-Week Session

**February 23:** Classes begin

**March 6:** Last day to drop with a tuition refund or change to audit (census date)

**April 10:** Last day to withdraw without grade penalty

**April 27–May 3:** Last week of classes

**May 10:** Final exams end

### Second 8-Week Session

**March 16:** Classes begin

**March 24:** Last day to drop with a tuition refund or change to audit (census date)

**April 18:** Last day to withdraw without grade penalty

**May 10:** Classes and examinations end

### Spring Break

**March 9–15:** Spring break for students. Non-instructional days. No classes. College offices open March 9–15.

**Please check NOVAConnect for start dates and census dates for variable duration (dynamic) sessions.**

# TABLE OF CONTENTS

Administration.....	2	Veterans Affairs Office .....	48
State Board for Community Colleges.....	2	Safety Information.....	48
College Calendar.....	3	Sexual Harassment.....	48
College Staff.....	6	Substance Abuse.....	48
Campuses and Centers .....	8	Technology Support and Guidelines .....	48
NOVA Online – Online Learning .....	15	Voter Registration.....	49
<b>General Information .....</b>	<b>16</b>	Student Consumer Information.....	49
History of the College .....	16	<b>Academic Policies and Information.....</b>	<b>51</b>
The College.....	16	Academic Integrity.....	51
Virginia Community College System .....	16	Academic Advising.....	51
Governance .....	17	Attendance/Student Participation.....	51
Accreditation and Recognition .....	17	Course Load .....	51
Statement of Values.....	17	Credits .....	51
NOVA Mission and Vision .....	19	Grades .....	52
NOVA General Education Goals.....	19	Repeating a Course.....	54
Graduation Rates .....	20	Course Prerequisites .....	54
Offerings .....	20	Student Development Courses .....	55
Learning and Technology Resources .....	21	Course Substitutions for Students with	
NVCC Educational Foundation .....	22	Documented Disabilities .....	55
Alumni Federation .....	23	Transferring Credit to NOVA .....	55
Grants Development.....	23	Examinations .....	56
<b>Admission Information .....</b>	<b>24</b>	Academic and Graduation Honors.....	56
Student Classifications .....	24	Graduation.....	57
Admission Procedures .....	24	Transcripts.....	58
NOVAConnect Student Information System .....	28	Transfer from NOVA.....	58
Identification Cards (NOVACard) .....	29	Academic Standing.....	59
Student Records Access.....	29	Academic Options .....	60
Campus of Record.....	29	<b>Academic Programs and Requirements.....</b>	<b>65</b>
<b>Placement .....</b>	<b>30</b>	Degrees and Certificates .....	65
English Language Requirement.....	30	Degree Requirements .....	66
Admission Testing .....	30	General Education Electives .....	68
Placement Testing.....	30	<b>Programs of Study.....</b>	<b>70</b>
<b>Enrollment Information .....</b>	<b>33</b>	<b>Allied Health and Nursing</b>	
Registering, Dropping, or		<b>Programs and Requirements .....</b>	<b>126</b>
Withdrawing from Courses .....	33	<b>Course Descriptions .....</b>	<b>151</b>
NOVA Online Enrollment.....	35	<b>Emeritus .....</b>	<b>270</b>
Course Schedule Changes During First		<b>Advisory Committees .....</b>	<b>274</b>
Week of Sessions .....	35	<b>Curriculum Codes .....</b>	<b>281</b>
Holds on Student Records/Service Indicators .....	36	<b>Curricula – Campus and NOVA Online</b>	
Auditing a Course.....	36	<b>Offerings.....</b>	<b>282</b>
<b>Financial Information .....</b>	<b>37</b>		
Tuition .....	37		
Tuition Payment.....	40		
Tuition Refunds .....	40		
Fees, Charges, and Expenses.....	40		
Nonpayment of Debts .....	41		
Financial Aid Information.....	41		
<b>Student Services.....</b>	<b>45</b>		
Student Rights and Responsibilities .....	45		
Counseling and Advising Services.....	45		
Nova Online Students .....	47		
New Student Orientation .....	47		
Student Life.....	47		
Disability Services.....	47		
Military Services Office .....	48		

# COLLEGE STAFF

COLLEGE STAFF	TELEPHONE
<b>Dr. Scott Ralls, President</b>	<b>703-323-3101</b>
<b>Academic and Student Services</b> Dr. Melvyn D. Schiavelli, Executive Vice President	703-323-3195
<b>Academic Affairs</b> Dr. Sharon N. Robertson, Associate Vice President	703-323-3198
<b>Academic Assessment</b> Sharon Karkehabadi, Associate Vice President	703-323-3086
<b>Advancement</b> Elizabeth K. Weatherly, Vice President of Institutional Advancement	703-373-3716
<b>Budget</b> Diana Cline, Director	703-323-2158
<b>Call Center</b> Linda Barthelus, Director	703-323-3409
<b>College Enterprises</b> Nathan Katzman, Director	703-425-5429
<b>College Information Systems</b> Jeff Petrarca, Director, ERP Application Technical Support	703-323-3393
<b>College Records Office</b> Alethea Hamilton, Director	askthecro@nvcc.edu
<b>Controller</b> John Guszak	703-323-3054
<b>Disability Services</b> Joan Ehrlich, Interim Director	703-323-3187
<b>Dual Enrollment</b> Amy Nearman, Director	703-323-6043
<b>E-Learning</b> Dr. Jennifer Lerner, Associate Vice President	703-323-3807
<b>Emergency Management and Planning</b> TBA, Director	703-764-5043
<b>Equity and Diversity</b> Everett V. Eberhardt, Director	703-323-3006
<b>Facilities Planning and Support Services</b> Steven Patterson, Acting Director	703-323-3554
<b>Finance</b> Dimitrina Dimkova, Vice President	703-323-3122
<b>Financial Aid</b> Joan Zanders, Director	703-323-3014
<b>Financial Services</b> Bridget Johnson, Director	703-323-3721
<b>Government Affairs and Community Relations</b> Thomas D. (Dana) Kauffman, Director	703-323-3753
<b>Grants and Special Projects</b> Robert Henderson, Assistant Director	703-323-3493
<b>Human Resources</b> Charlotte Calobrisi, Associate Vice President	703-323-2127
<b>Instructional and Information Technology</b> Dr. Steven G. Sachs, Vice President	703-323-3387
<b>Institutional Research and Student Success Initiatives</b> Dr. George E. Gabriel, Vice President	703-323-3129

<b>COLLEGE STAFF</b>	<b>TELEPHONE</b>
<b>Internal Communications and Web Services</b> TBD	703-323-3515
<b>International Education Sponsored Programs</b> Syedur Rahman, Associate Vice President	703-764-7384
<b>International Student Services</b> Stephen L. Bennett, Coordinator	703-323-3413
<b>IT Project Management</b> Aaron Raffle, Director	703-323-3278
<b>IT Support Services</b> Allen Sinner, Chief Technology Officer/Director	703-323-3278
<b>IT Client Services</b> Wayne Ledford, Director	703-764-7773
<b>Materiel Management</b> Ed Mellon, Director	703-323-3083
<b>Media Processing Services</b> Sandra J. Beeson, Coordinator	703-323-3096
<b>Military Services and Outreach</b> Takesha McMiller, Director	703-293-8130
<b>NVCC Educational Foundation</b> John J. Ruffino, Executive Director	703-323-3023
<b>College Police</b> Chief Daniel Dusseau	703-764-5037
<b>Student Services and Enrollment Management</b> Dr. Elizabeth P. Harper, Associate Vice President	703-323-3459
<b>Technology Applications Center</b> Pamela Wimbush, Director	703-323-3765
<b>Television Studio Services</b> Charles Siegel, Manager	703-323-3743
<b>Transfer Services</b> Jennifer Nelson, Coordinator	703-323-2250
<b>Workforce Development</b> Steven Partridge, Vice President	703-323-2399

As of 06/01/17





## ALEXANDRIA CAMPUS

**5000 Dawes Avenue, Alexandria, Virginia 22311**

For campus maps, directions, and building locations, go to <http://www.nvcc.edu/campuses>

CAMPUS OFFICES AND STAFF	ROOM	TELEPHONE
<b>Main number</b>		<b>703-323-3000</b>
Academic Success Center	AA229	703-845-6363
Bookstore	AFA148	703-671-0043
Business Office	AA187	703-845-6211
Campus Operations	AA185	703-933-3977
Counseling Services	AA193	703-933-5073
Division of Language, Arts and Social Science: Dr. Jimmie McClellan, Dean	AA252	703-845-6223
Division of Math, Science, Technology and Business: Dr. Ivy Beringer, Dean	AA352/427	703-575-4722
Enrollment Services: Niki Neal, Registrar	AA194B	703-845-6335
Financial Aid	AA148	855-323-3199
Information Technology Services	AA429	703-845-6226
Learning and Technology Resources: Matthew Todd, Acting Dean	AA232	703-845-6033
Library	AA232	703-845-6231/6456
Off-Campus Military Site Credit Programs	FTM417	703-527-5976
Open Computer Lab	AA332	703-845-6042
Police/Public Safety	AA240	703-764-5000
Provost: Dr. Annette Haggray	AA287	703-933-8390
Schlesinger Concert Hall and Arts Center: Stephen Shetler, Manager	AS102	703-845-6156
Student Services: Dr. Tyson Beale, Dean	AA195	703-845-6321
Student Life: Jackie Artis, Coordinator	AA134	703-845-6218
Technology Innovation in Learning and Teaching	AA343/337	703-933-3998
Testing Center	AA155	703-845-6336
Veterans Advisor: Victoria Esannason	AA194M	703-933-8332
Voc Rehab/Vet Success Counselor: Michelle Pohmer	AA194K	703-575-4706

As of 05/18/18



## ANNANDALE CAMPUS

**8333 Little River Turnpike, Annandale, Virginia 22003**

For campus maps, directions, and building locations, go to <http://www.nvcc.edu/campuses>

CAMPUS OFFICES AND STAFF	ROOM	TELEPHONE
<b>Main number</b>		<b>703-323-3000</b>
<b>Provost: Dr. Pamela Hilbert</b>	<b>CG202</b>	<b>703-323-3223</b>
Academic Support Services (Tutoring)-Math and Science Center	CG405	703-323-3139
Academic Support Services (Tutoring)-Reading and Writing Center	CG409	703-323-3341
Academic Support Services (Tutoring)-Language Center	CG408	703-323-3438
Adjunct Office	CT233	703-323-3081
Bookstore	CA202	703-323-3185
Business Office	CA104	703-323-3132
Campus Operations: Rizwan Rahman, Director	CG202	703-425-5194
Career & Transfer Centers	CA105	703-323-3144
Counseling Services: Kelly DeSenti, Associate Dean of Students	CA112	703-764-6011
Emergency Management	CG211P	703-425-5635
Evening Administration: Dr. Andrew S. Goldstein, Coordinator	CT233	703-323-3723
Faculty/Staff Resource Center	CG206	703-323-3855
Financial Aid	CA113	855-323-3199
Information and Instructional Support Services	CG402	703-323-4259
International Student Center	CA113	703-323-2272
Languages, Arts, Social Sciences Division: Ms. Jennifer Daniels, Dean	CN228	703-323-4441
Learning and Technology Resources: Dr. Braddlee, Dean	CG206	703-323-3217
Library: Elizabeth Dellavedova	CG300	703-323-3128
Math, Science, Technologies, and Business Division: Dr. Abbas Eftekhari, Dean	CS208	703-323-3109
Military & Veteran Services	CA114B	703-764-5004
NOVACard	CA103	703-323-3210
Open Computer Lab	CT122	703-323-3036
Pathway to the Baccalaureate	CA112	703-323-3359
Parking Services	CA103	703-323-4267
Police/Public Safety	CA235	703-764-5000
Student Life	CF232	703-323-3147
Student Services: Dr. ellen Fanchez-Ruiz, Dean	CA315	703-323-3382
Student Success: Kimberly U. Wright, Coordinator	CA113	703-323-3208
Student Support Services	CA113	703-323-3328
Testing Center: Jason DeFreitas, Supervisor	CA115	703-323-3149
Workforce Development: Martha Kossoff	CE202	703-323-3168



## LOUDOUN CAMPUS

**21200 Campus Drive, Sterling, Virginia 20164**

For campus maps, directions, and building locations, go to <http://www.nvcc.edu/campuses>

CAMPUS OFFICES AND STAFF	ROOM	TELEPHONE
<b>Main number</b>		<b>703-323-3000</b>
<b>Provost: Dr. Julie Leidig</b>	<b>LR252</b>	<b>703-450-2517</b>
Bookstore: Shellie Lopez	LR135	703-450-2589
Campus Operations: Sally Wrenn, Director	LR217	703-450-2558
Communications and Human Studies Division: Dr. Katherine Hitchcock, Dean	LR304	703-450-2505
Community Relations: Tatyana Schum	LR308	703-450-2520
Counseling Services: Titus Lane, Associate Dean	LR253	703-450-2572
Enrollment Services: Maria (Gert) Heslin, Registrar	LR246	703-450-2517
Financial Aid: Jack Zegeer	LR249	855-323-3199
First-Year Advising Center: Frank De Leon	LR242	703-948-5735
Information Technology: Chuck Johnson	LR208	703-450-2660
Learning and Technology Resources: Dr. Randolph S. Fournier, Dean	LC328	703-948-7798
Library: Chrystie Greges, Julie Combs	LC202	703-450-2567
Math Lab: Phi Phung Trinh	SH313	703-450-2644
Natural and Applied Sciences Division: Barbara Canfield, Dean	LR303	703-450-2575
Parking Services: Omar Baluch, Manager	LR241	703-450-2523
Police/Public Safety: Acting Sgt. Chris Powell	LR267	703-764-5000
Student Life: Tiffney Laing, Coordinator	LC102N	703-450-2616
Student Services: Debbie Wyne, Dean	LR242	703-450-2512
Student Success: Frank De Leon	LR242	703-948-5735
Testing Center: Theresa Todoroff	LR251	703-450-2508
Tutorial Services: Martha Janowski	LC202H	703-948-7569
Veterans Advisor: Luis Charboneau	LR249	703-450-2583
Writing Center: Jeremy Ruane	LR250	703-450-2511

As of 05/07/18





## MANASSAS CAMPUS

**6901 Sudley Road, Manassas, Virginia 20109**

For campus maps, directions, and building locations, go to <http://www.nvcc.edu/campuses>

CAMPUS OFFICES AND STAFF	ROOM	TELEPHONE
<b>Main number</b>		<b>703-323-3000</b>
<b>Provost: Dr. Molly Lynch</b>	<b>MH317</b>	<b>703-257-6664</b>
Bookstore	MH109	703-257-6667
Business Office: Business Manager	MH310	703-257-6625
Campus Operations: Essala Lowe, Director	MH314	703-530-2835
Communications and Social Sciences Division	MC234	703-257-6681
Counseling Services: Steven Rakoff, Associate Dean	MH110	703-530-8292
Enrollment Services: Leanne Stepanovich, Registrar	MH111	703-257-6620
Financial Aid: Lisa A. Branson, Financial Aid Manager	MH110	703-257-6613
Learning and Technology Resources: Lynn Bowers	MC129D	703-257-6641
Learning Laboratory	MH112	703-257-6645
Library	MC129	703-257-6640
Military Services		703-845-8132
Police/Public Safety: Sgt. Jeffrey Rudolph	MH309	703-257-6560
Science and Applied Technologies Division	MP130	703-257-6605
Student Life: Marcie Schreiber, Coordinator	MH108A	703-257-6665
Student Services: Dr. Mark Kidd, Dean	MH313	703-257-6660
Testing Center: Maureen Townsend, Supervisor	MH108	703-257-6653
Tutoring Center: Salma Amlani, Supervisor	MH318	703-257-6622
Veterans Advising	MH111	703-257-6622

As of 06/01/17



## MEDICAL EDUCATION CAMPUS

**6699 Springfield Center Drive, Springfield, Virginia 22150**

For campus maps, directions, and building locations, go to <http://www.nvcc.edu/campuses>

CAMPUS OFFICES AND STAFF	ROOM	TELEPHONE
<b>Main number</b>		<b>703-323-3000</b>
<b>Provost: Dr. Nicole Reaves</b>	<b>HE205E</b>	<b>703-822-6699</b>
Allied Health Division: Andrew Cornell, Dean	HE205D	703-822-6548
Bookstore	HE106	703-822-6605
Business Office: Mitchell G. Markon, Acting	HE204E	703-822-6514
Campus Operations: Marion Devoe, Director	HE205B	703-822-0028
Counseling Services: Ms. Kim Nicely, Coordinator	HE202E	703-822-6546
Enrollment Services: Angelique Robinson, Registrar	HE204I	703-822-6658
Financial Aid: John Riemer	HE203D	703-822-9056
Grants Development	Virtual	703-822-6517
Instructional Technology Services	HE325	703-822-6667
IT Client Services: Wayne Ledford	HE323	703-764-7773
Learning and Technology Resources: Vacant, Dean	HE341C	703-822-6679
Library	HE341	703-822-6684
Military Services	HE202	703-293-8132
Nursing Division: Dr. Marsha Atkins, Dean	HE326A	703-822-6698
Open Computer Lab	HE343	703-822-6671
Police/Public Safety	HE102G	703-764-5000
Student Life: Patricia Martin-Mattocks	HE116C	703-822-6598
Student Services: Dr. Beatrice McKeithen, Dean of Students	HE203	703-822-6537
Testing Center	HE344	703-822-6654
Tutoring Center	HE106	703-822-6569
Veterans Advisor: Vacant	HE140A	703-822-6540

As of 05/16/18





## WOODBIDGE CAMPUS

**2645 College Drive, Woodbridge, Virginia 22191**

For campus maps, directions, and building locations, go to <http://www.nvcc.edu/campuses>

CAMPUS OFFICES AND STAFF	ROOM	TELEPHONE
<b>Main number</b>		<b>703-323-3000</b>
<b>Provost: Dr. Sam Hill</b>	WC233B	703-878-5751
Admissions & Registration: Lando Lowe	WS202	703-878-5760
Bookstore: Jennifer Darrah-Hunter	WB	703-878-5774
Business Office	WS231	703-878-5605
Campus and Community Relations Specialist: Charlene Wilkins	WS238	703-878-5626
Campus Operations: Maxine Toliver, Director	WS243	703-878-5778
Counseling Services: Mark Bumgarner, Associate Dean of Students	WS208L	703-878-5760
Disabilities Services: Pam Manuel, Counselor	WS208J	703-878-5761
Emergency Management	WS128	703-878-4641
Enrollment Services: Samrawit Berhane-Washington, Registrar/DSO	WS202C	703-878-5737
Evening & Weekend Administration: Lawrence Nightingale	WS126	703-878-5620
Financial Aid: Tatiana Hunter	WS229	855-323-3199
First-Year Advising Center	WS202	703-878-5760
Information Technology/IT Support Services: Rachel Overbey, Manager	WS336C	703-878-5872
Instructional Support Services: Bo Yang	WS438	703-878-5898
Learning and Technology Resources: Kathy Bohnstedt, Dean	WAS230C	703-878-5728
Liberal Arts & Social Sciences Division: David Epstein, Dean	WAS118	703-878-5715
Library: Kerry Cotter	WAS230B	703-878-5733
Math/MTT Lab: Maksim Klimovich	WS428	703-878-4638
Math, Science, Technology & Business Division: Alison Thimblin, Dean	WAS306	703-878-5741
Military and Veteran Services: Jinky Ebarle-Tweedie	WS208	703-878-4636
NOVACard : Aimi Walker	WS126	703-878-5815
Open Computer Lab: Rachel Overbey, Manager	WS336	703-878-5714
Parking Services: Aimi Walker	WS126	703-878-5815
Pathway to the Baccalaureate	WS202	703-878-5760
Police/Public Safety: Sgt. Debera Long	WS102	703-878-5744
Student Life	WS158	703-878-5729
Student Services: Michael Turner, Dean	WS208A	703-878-5759
Student Services Center: Lando Lowe	WS202	703-878-5760
Student Success: Tykeshia Myrick, Coordinator	WS208B	703-878-5863
Testing Center: Mary Beth Bradley, Manager	WS436	703-878-5787
Tutoring Center (PIER): Chris Stallings, Coordinator	WS328	703-878-5657

As of 06/01/17

# RESTON CENTER

**1831 Wiehle Avenue, Third Floor, Reston, Virginia 20190**

For campus maps, directions, and building locations, go to <http://www.nvcc.edu/campuses>

<b>CENTER OFFICES AND STAFF</b>	<b>ROOM</b>	<b>TELEPHONE</b>
<b>Main number</b>		<b>703-323-3000</b>
Director: Laura Siko (Reston Center and Signal Hill)	RES331	703-948-7589
Counseling	RES330	703-948-7731
Enrollment Services	RES351	703-948-7733
Information Technology	RES318	703-948-7747
Library	RES337	703-948-7736
Testing Center	RES329	703-948-7737

As of 06/01/17

## NOVA ONLINE – ONLINE LEARNING

NOVA Online offers online learning courses to students who require a more flexible schedule for their academic work, seek to complete NOVA courses while residing outside the local area, or prefer to learn online. Many NOVA degrees/specializations and certificates can be earned—in their entirety or in part—online. Courses are available in more than sixty disciplines. See the NOVA Online website at <http://eli.nvcc.edu> for a complete listing of programs and courses.

Most coursework may be completed at home, although some courses require some face-to-face participation. For each 3-credit course, students should plan to study at least 6–9 hours each week. All NOVA Online online learning courses require regular Internet access. NOVA Online courses have regular deadlines for course progress. When taking a NOVA Online course, students will have faculty and staff support when they need it. Faculty provide valuable assistance by telephone, e-mail, office visits, or web conferencing. NOVA Online has counselors, success coaches, a librarian, online tutors, and other support staff to assist students, and the NOVA campuses provide additional services such as computer labs and in-person tutoring. Students also interact with their classmates throughout their online courses.

Courses include two or more proctored exams/ assignments. These exams should be taken at one of NOVA's campus Testing Centers, with a NOVA-approved proctor for students living outside the Northern Virginia area, or via webcam through NOVA Online's online proctoring service.

Students may enroll in NOVA Online courses the same way they enroll in on-campus courses, through NOVAConnect online. Most NOVA Online courses have multiple sections starting throughout the semester. When course capacity limits are reached, NOVA Online sections are closed to further enrollment. Advising for NOVA Online courses is available from the NOVA Online counselors. Students who are veterans and enroll in a NOVA Online course will not be certified for benefits until they satisfactorily complete the course. For international students, certain restrictions apply to how many NOVA Online credits they may take in a given semester.

NOVA Online offices are located at 3922 Pender Drive, Fairfax, Virginia 22030.

For additional information, see “NOVA Online” in the Academic Policies and Information section of this *Catalog* or visit the NOVA Online website at <http://eli.nvcc.edu>. Individuals may write to NOVA Online, Northern Virginia Community College, 8333 Little River Turnpike, Annandale, Virginia 22003, or call 703–323–3368 or 703–323–3347.

NOVA Online STAFF	TELEPHONE
<b>Main number</b>	<b>703–323–3000</b>
Counselors	703–323–2425
NOVA Online Hotline	703–323–3347
Financial Aid	703–764–5015
IT Support	703–764–5051
Librarian	703–764–5083
Registration	703–323–3368
Success Coaches	703–764–5076
Testing/Proctors	703–323–3347

# GENERAL INFORMATION

## History of the College

Northern Virginia Community College (NOVA) was established in 1964 as Northern Virginia Technical College to serve the counties of Arlington, Fairfax, Loudoun and Prince William and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park.

The College opened for classes in the fall of 1965 in a single building in Bailey's Crossroads. Enrollment was 761 students who were served by a faculty and staff of 46. Robert L. McKee was the first president. Dr. Richard J. Ernst became the second president of the College in September 1968 and served for thirty years. Dr. Belle S. Wheelan became the third president of the College in July 1998 and served for three years. Dr. Robert G. Templin, Jr., became the fourth president of the College in August 2002.

The College was renamed Northern Virginia Community College in 1966 when the Statewide General Assembly changed the name of the technical college system to the Virginia Community College System (VCCS). College transfer curricula were added to the existing career/technical curricula for a more comprehensive program.

In 1966, the College bought 78 acres in Annandale, which became the first of six permanent campus sites. The first building was constructed there and opened in 1967. That same year, 100-acre sites were purchased for campuses in Sterling, Manassas, and Woodbridge. In 1969, a campus site was purchased for Alexandria. The campus site for the Medical Education Campus was purchased in 2000.

Classes were first offered in Loudoun, Manassas, and Woodbridge in the fall of 1972. Classes moved from Bailey's Crossroads to the Alexandria Campus in 1973. The Extended Learning Institute (ELI) began offering home study courses in January 1975 and has developed into a leader in online education. In the fall of 2003, the Medical Education Campus opened in Springfield, Virginia, to meet both student and employer demand for health professions education. The College opened a new educational center in 2006 in Reston.

The College's enrollment and programs grew rapidly. By 1970, enrollment exceeded 10,000 students. By 1973, NOVA became the largest institution of higher education in Virginia with 17,260 students. During the 2015–2016 academic year, the College served more

than 75,800 students in credit courses and another 22,400 in noncredit courses.

## The College

Northern Virginia Community College is an open access, comprehensive community college offering two-year associate degrees, one-year certificates, and career studies certificates as well as continuing education and community services programs. As one of the 23 colleges comprising the Virginia Community College System, NOVA is governed by the Virginia State Board for Community Colleges.

NOVA strives to meet the educational and training needs of people with differing abilities, education, experiences, and individual goals through a variety of curricula and co-curricular programs and community services. Many curricula are available on all campuses although some highly specialized programs are offered on only one or two campuses. Each campus offers a comprehensive array of student services.

NOVA provides a strong counseling program to assist students in making sound decisions regarding career, educational, and personal goals. Counselors work with students to guide them to the curriculum that best suits their needs and interests. The College also provides services in pre-college and freshman orientation, career counseling, financial aid, testing, veterans affairs, and student life.

The College operates on the semester system with 16-week Fall and Spring Semesters and a 10-week Summer Session. Many courses are offered in shorter sessions, often including 12-week, 10-week, 8-week, and 6-week sessions, to meet the needs of students, business, and industry.

## Virginia Community College System

Northern Virginia Community College is one of 23 two-year colleges that make up the Virginia Community College System (VCCS). The VCCS was established in 1966 with a mission that complements the missions of the secondary schools and the senior colleges and universities in the Commonwealth of Virginia. The VCCS mission states: "The mission of the Virginia Community College System is to provide comprehensive higher-education and workforce-training programs and services of superior quality that are financially and geographically accessible and that meet individual, business, and community needs of the Commonwealth."

## Governance

The governing board for all 23 colleges in the Virginia Community College System is the State Board for Community Colleges. The governor of the Commonwealth of Virginia appoints the members to this board. Each community college establishes its own local board. The Northern Virginia Community College Board provides local leadership and approves items to be recommended to the State Board for consideration. Members of the College Board are appointed by the nine political jurisdictions served by the College. The local board is composed of three members from Fairfax County and one member from each of the other jurisdictions.

Members of the community serve on curriculum advisory committees for career and technical curricula offered at the College. Committee members are selected from career fields that are directly related to the career objectives of programs at NOVA. These committees provide the guidance necessary for planning new programs and insuring that courses and programs continue to provide instruction in the skills suited for the job market in Northern Virginia. The maintenance and operating budget for the College is provided through appropriations made by the Virginia General Assembly. The nine political jurisdictions of Northern Virginia provide local funding for the purchase of sites and site development. The General Assembly approves capital outlay funding for building construction and initial equipment.

## Accreditation and Recognition

Northern Virginia Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award the associate degree. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia, 30033–4097, or call 404–679–4500 for questions about the accreditation of Northern Virginia Community College. For other information about the College, please contact NOVA’s Administrative Offices, 4001 Wakefield Chapel Road, Annandale, Virginia 22003–3796 or call 703–323–3000.

Curricula of the College are approved by the College Board and by the State Board for Community Colleges. Its two-year associate degree programs are also approved by the State Council of Higher Education for Virginia (SCHEV). Certain curricula of the College are accredited or otherwise recognized by specialized accrediting organizations. They include

- the Allied Health and Nursing Programs, accredited by the Accreditation Commission for Education in Nursing; American Dental Association, the Commission on Accreditation of Allied

Health Education Programs, the Commission on Accreditation of Educational Programs for Emergency Medical Services Professions, the Commission on Accreditation for Health Informatics and Information Management Education, the Commission on Accreditation in Physical Therapy Education, the Commission on Accreditation for Respiratory Care, and the National Accrediting Agency for Clinical Laboratory Sciences;

- the Air Conditioning and Refrigeration A.A.S., recognized by HVAC Excellence (Benchmark of Academic Excellence);
- the Culinary Arts Certificate, an apprenticeship program recognized by the American Culinary Federation;
- the Paralegal Studies Program, approved by the American Bar Association; and
- the Veterinary Technology Program, accredited by the American Veterinary Medical Association – Committee on Veterinary Technician Education and Activities.

See the individual program descriptions for additional details.

## Statement of Values

### Our Commitment

We, at Northern Virginia Community College, are committed to our students, to our community, and to each other. We are committed to excellence in education and take pride in our educational mission as a significant extension of the democratic tradition, and we remain true to the ideals and principles of that cherished tradition. The foundation of our institution is the unique diversity of educational experiences we provide for the community, shaped by our dedication to teaching and learning and to the values that we share.

### Our Shared Values

#### Opportunity with Excellence

We are committed to providing open access and promoting equality for all who seek to improve their lives.

We are committed to offering a wide variety of programs and services within the means of all residents and with each having its standards of excellence.

We encourage our students to take advantage of opportunities and to fulfill their potential in aesthetic and cultural enrichment, technical knowledge, personal growth, understanding of the basic academic disciplines, and recreational and avocational pursuits.



## **Responsiveness**

We believe that the residents of Northern Virginia, both individual and corporate, should help shape the programs, courses, and services of the College.

We are committed to listening to the community and inviting its participation in shaping the programs and services of the College.

We believe our worth as a community college is measured by the quality and timeliness of our response and service to the community.

## **Comprehensive Educational Programs**

We see learning as an end in itself, as the most practical means to a full life, and as essential to improving the quality of life of the individual.

We value our comprehensive programs—liberal arts and sciences, career and technical education, continuing education, developmental education, specialized educational services, and student services—and hold all to be of equal distinction and prominence.

We believe each aspect of our comprehensive educational program has high value to those served; therefore, we advocate the offering of these comprehensive services alongside each other and in a unified educational setting.

We are foremost an institution focused upon teaching—we are dedicated to teaching through

varied approaches and to upholding innovation with free, open discussion of ideas and values.

## **Caring Environment**

We believe in the worth, dignity, and human potential of each individual who participates in the programs and services of the College.

We recognize our responsibility to build and maintain a College environment that encourages all individuals to realize their potential and to provide the diverse learning support and growth opportunities each person needs to be successful.

We are committed to maintaining a caring environment for all those associated with the College—students, faculty, staff, and the community in general.

## **Public Trust and Responsibility**

We are committed to individual and organizational performance that builds and maintains public trust and confidence.

We hold ourselves accountable for attaining management, operational, and fiscal practices that are efficient and effective.

We are committed to high ethical standards, equal opportunity, and effective involvement in and support for local community activities and economic development.



## NOVA Mission and Vision

### Our Mission

With commitment to the values of access, opportunity, student success, and excellence, the mission of Northern Virginia Community College is to deliver world-class, in-person and online postsecondary teaching, learning, and workforce development to ensure our region and the Commonwealth of Virginia have an educated population and a globally competitive workforce.

### Our Vision

To be a learning-centered organization that promotes student success.

## NOVA General Education Goals

The College has established goals for each degree program to enhance student learning experiences beyond the major area of study. The following are the College's general education goals:

### Communication

Students will demonstrate the ability to

- understand and interpret complex materials;
- assimilate, organize, develop, and present an idea formally and informally;
- use standard English;
- use appropriate verbal and nonverbal responses in interpersonal relations and group discussions;
- use listening skills; and
- recognize the role of culture in communication.

### Critical Thinking

Students will demonstrate the ability to

- discriminate among degrees of credibility, accuracy, and reliability of inferences drawn from given data;
- recognize parallels, assumptions, or presuppositions in any given source of information;
- evaluate the strengths and relevance of arguments on a particular question or issue;
- weigh evidence and decide if generalizations or conclusions based on the given data are warranted;
- determine whether certain conclusions or consequences are supported by the information provided; and
- use problem-solving skills.

### Cultural and Social Understanding

Students will demonstrate the ability to

- assess the impact that social institutions have on individuals and culture—past, present, and future;
- describe their own as well as others' personal ethical systems and values within social institutions;
- recognize the impact that arts and humanities have upon individuals and cultures;

- recognize the role of language in social and cultural contexts; and
- recognize the interdependence of distinctive worldwide social, economic, geo-political, and cultural systems.

### Information Literacy

Students will demonstrate the ability to

- determine the nature and extent of the information needed;
- access needed information effectively and efficiently;
- evaluate information and its sources critically and incorporate selected information into his or her knowledge base;
- use information effectively, individually or as a member of a group, to accomplish a specific purpose;
- understand many of the economic, legal, and social issues surrounding the use of information and access and use information ethically and legally; and
- show computer competency in discipline-specific skills necessary for successful transfer or employment.

### Personal Development

Students will demonstrate the ability to

- develop and/or refine personal wellness goals; and
- develop and/or enhance the knowledge, skills, and understanding to make informed academic, social, personal, career, and interpersonal decisions.

### Quantitative Reasoning

Students will demonstrate the ability to

- use logical and mathematical reasoning within the context of various disciplines;
- interpret and use mathematical formulas;
- interpret mathematical models such as graphs, tables, and schematics and draw inferences from them;
- use graphical, symbolic, and numerical methods to analyze, organize, and interpret data;
- estimate and consider answers to mathematical problems in order to determine reasonableness; and
- represent mathematical information numerically, symbolically, and visually, using graphs and charts.

### Scientific Reasoning

Students will demonstrate the ability to

- generate an empirically evidenced and logical argument;
- distinguish a scientific argument from a nonscientific argument;
- reason by deduction, induction, and analogy;
- distinguish between causal and correlational relationships; and

- recognize methods of inquiry that lead to scientific knowledge.

## Graduation Rates

Many students attending Northern Virginia Community College do not plan to graduate with an associate degree or certificate, but enroll for the purpose of improving job skills, taking credits for transfer to another college, or for some specialized need or personal satisfaction. Determining graduation rates, given students' varied objectives is difficult; however, prospective or enrolled students who would like to know more about the enrollments and completion rates for a particular curriculum may obtain much of this information on the College's Office of Institutional Research website at <http://www.nvcc.edu/oir/novadata.html>.

## Offerings

### College Transfer Education

The College transfer program includes courses typical of the first two years of a baccalaureate program in arts and sciences or pre-professional programs. NOVA transfer courses closely parallel courses at four-year institutions, meeting standards acceptable to baccalaureate degree programs. Since requirements vary among four-year schools, those planning to transfer should check the requirements of the transfer institution before planning a course of study at NOVA.

For more information on college transfer, refer to NOVA's transfer website at <http://www.nvcc.edu/transfer/index.html>.

### Career and Technical Education

The career and technical education programs are designed to meet the increasing demand for technicians, office workers, paraprofessionals, and skilled craftspersons for employment in industry, business, the professions, and government. These programs, which normally require two years or less of education beyond high school, may include preparation for agricultural, business, engineering, health and medical, industrial, service, and other technical and career fields. The curricula are planned primarily to meet the needs for workers in the region being served by the College, but the State Board for Community Colleges may designate certain community colleges as centers to serve larger areas of the state in offering expensive and highly specialized career and technical education programs.

### General Education

General education is that portion of the collegiate experience that addresses the knowledge, skills, attitudes, and values characteristic of educated

persons. It is unbounded by disciplines, and honors the connections among bodies of knowledge.

NOVA degree graduates will demonstrate competency in the following general education areas: communication, critical thinking, cultural and social understanding, information literacy, personal development, quantitative reasoning, and scientific reasoning.

### Developmental Studies

Developmental courses are offered to prepare students to succeed in the College transfer and career/technical programs. These English and mathematics courses are designed to develop the basic skills and understanding needed for success in other courses and curricula.

### English as a Second Language (ESL) Programs

NOVA ESL programs serve students who have a variety of goals, including access to American higher education, entry or advancement in the workforce, or simply language improvement. NOVA ESL students may be residents of Northern Virginia, students with F-1 status, or other visitors to the United States. The two principal NOVA ESL programs are College ESL and the American Culture and Language Institute (ACLI). In both ESL programs, students acquire fluency, enhance their ability to express increasingly complex ideas, and gain greater control of the linguistic complexities of English.

College ESL builds the academic literacy and critical thinking skills necessary for success in American higher education. College ESL consists of four levels of credit instruction from low-intermediate ESL through advanced ESL. Students in the top two levels of instruction are often concurrently enrolled in college-level courses in a variety of disciplines.

The ACLI is housed in the Office of Workforce Development. It offers noncredit classes to residents of Northern Virginia and other visitors in its Core Skills ESL and Specialty Courses Programs, and to students with F-1 status in its Intensive English Program. ACLI courses range from introductory to intermediate-level ESL. They also prepare individuals for entry or advancement in the workforce. ACLI courses are fee-based. Many ACLI students go on to take classes in College ESL and academic disciplines.

Students take a placement test to assess their English proficiency prior to enrolling in ESL courses. Students who score below 225 on the ACCUPLACER and students in F-1 status who place at College ESL Levels 2 and 3 are referred to the ACLI. Students who score 225 or higher on the ACCUPLACER may

place into College ESL or directly into ENG 111. In-state and out-of-state guidelines apply to the College ESL Program, and financial aid is available for those who qualify.

### **Continuing Education**

Through the Workforce Development Division, continuing education programs are offered to enable individuals the opportunity to continue their learning experiences. Continuing education programs are generally noncredit courses offered during the day and evening hours. The College awards Continuing Education Units (CEU) upon completion of most noncredit courses.

### **Community Education Services**

The College provides specialized services to help meet the cultural and educational needs of the residents of the Northern Virginia area. These services include nonclassroom and noncredit cultural events, workshops, meetings, lectures, conferences, seminars, short courses, and special community projects that are designed to provide cultural and educational opportunities for the residents of the region. The College works cooperatively with other local and state agencies and with businesses interested in developing such services.

### **Workforce Development Services**

The mission of Workforce Development Services is to advance Virginia's workforce through world-class programs and services that focus on employee and business development and technology deployment. Workforce development instruction is designed to assist Virginia residents in gaining skills necessary for entering employment or to retrain persons displaced from other jobs so that they may obtain gainful employment. These programs are usually of a short-term nature and are tailored to fit the exact needs of a regional business. To provide this service, NOVA's Workforce Development Office deals directly with employers in designing and offering courses to meet real, current, and projected workforce training needs. These course offerings are made available to business and industry at times and places that meet their needs. Training may take place anywhere in Virginia, as approved by the State Board for Community Colleges. For more information, go to the workforce development website at [www.nvcc.edu/workforce](http://www.nvcc.edu/workforce).

### **Adult Career Pathways**

NOVA's Adult Career Pathways Program is for unemployed or underemployed workers, low-wage workers, work-eligible immigrants comfortable with reading and writing English, and young career starters with a high school diploma or GED. The

program connects participants with NOVA career counselors who assist them in developing an education or training plan to earn a certification or credential. ACP counselors introduce students to programs and opportunities available to them and help students navigate the procedures necessary to attend NOVA classes and apply for financial assistance. For further information and upcoming College Access Workshop dates, please contact [acp@nvcc.edu](mailto:acp@nvcc.edu) or 703-425-5245.

### **Community-Based Organizations**

NOVA partners with several community-based organizations (CBOs) to offer its credit courses at the CBO sites. These partnerships provide education and training at nonprofit organizations that will create gateways of opportunity to higher education, better jobs, and increased earnings to students who are pursuing the American dream. Students receive NOVA credit and job training at the CBO site in administrative technologies, administration of justice, business management, finance, entrepreneurship, information technologies, and early childhood development fields. Students in this program will receive a NOVA transcript that shows credits and grades earned at the College. CBO students pay NOVA tuition; they are provided orientation, financial aid workshops, and assistance with application and registration by NOVA staff members. Students who wish to take a CBO class should contact one of the CBO partners, visit the website <https://www.nvcc.edu/cbo/index.html>, or call 703-933-1844.

## **Learning and Technology Resources**

Learning and technology resources provided at each campus include library services, and may include information and instructional technology support services, audiovisual services, placement testing, and learning laboratory facilities. The materials, systems, and services are designed to support the programs of the College and to create an environment conducive to learning. While the primary emphasis is directed towards supporting instructional programs at each campus, appropriate services are provided to citizens as a part of the College commitment to serve the educational needs of the community.

### **Library**

Students, faculty, staff, and members of the local community may access the combined College collection of more than 400,000 units of print and nonprint materials that is available at all of the campuses or remotely via the College's online public access catalog. Books, periodicals, and media are loaned among the campuses by intercampus mail couriers.



Open stacks and immediate access to materials are common to all campuses. Books, periodicals, online databases, and media are selected primarily for support of the campus instructional programs, for personal intellectual growth, and the development of a cultural environment. Extensive access to online materials adds breadth and depth to the resources. All patrons may use networked workstations on campus to search a variety of online resources and the Internet. Access to electronic resources and campus library information is available at [www.nvcc.edu/library](http://www.nvcc.edu/library). Students, faculty, and staff may also access subscription databases remotely through a proxy server.

Staff members provide reference assistance and instruction in the use of resources both on-site and virtually to distance users. Through a reciprocal agreement, NOVA students, faculty, and staff have access to the library collections at George Mason University.

### **Learning Laboratories and Testing Services**

Systems for individual use of self-instructional materials are common to all campuses. Individualized instruction is offered through a variety of instructional systems. Testing services for placement purposes, for classes, and in support of the Extended Learning Institute are available in the Testing Centers. Trained staff members provide access, instruction, and tutorial assistance in foundation subjects. Both specialized and generalized learning laboratories are designed to support and complement the instructional programs on the individual campuses.

### **Instructional Technology Services**

Instructional Technology Services supports classroom instruction, community services, the library, and the learning laboratories. The staff assists faculty in the technological aspects of instructional design, including photography, computer graphics, web page design and video production, and provide support for the use of distance education systems and software.

### **Information Technology Support Services**

Information Technology Support Services provides College personnel with information technology services, which include computer installation, hardware and software troubleshooting, telephone services, network connections, and technology training.

### **Assistive Technology Services**

The Office of Disability Services provides College personnel professional development opportunities in the use of assistive technology tools used to

serve students with disabilities. Some of those tools include software programs to help enhance academic skills in reading and writing, text-to-speech programs, dictation software programs, as well as hardware such as alternate keyboards, text magnifiers, and start pens. Disability Services also provides support in the conversion of alternate format for texts and course materials when needed to support the specific needs of students with disabilities.

### **Video Services**

Television production, video streaming and video conferencing services are provided by the Video Services Unit. Virginia Distance Education Network video conferencing links among the campuses and other colleges are provided and supported by College Video Services and supported by campus IT staff. The television facility is located on the Annandale Campus and provides a complete television production, editing and transmission facility. The television facility provides a direct link to local cable TV systems for College programming and also has connections to George Mason University to provide satellite uplink services.

## **NVCC Educational Foundation**

The Northern Virginia Community College Educational Foundation, Inc. was established to provide additional financial support for the College's students and programs. Created in October 1979 as a nonprofit, tax-exempt 501(c)(3) charitable foundation, it strives to obtain resources from private individuals, businesses, and other foundations to enhance the College's mission.

Gifts to the Foundation are tax deductible under Section 170 of the Internal Revenue Service Code and may be designated as restricted or unrestricted by donors. The Foundation accepts gifts of cash, securities, real estate, insurance policies, and personal property such as books and other library materials, works of art, and equipment. Charitable gift annuities, remainder unitrusts, bequests, life-income plans, and memorial gifts can be arranged for the donor's and College's benefit. The Foundation offers scholarships for some currently enrolled students. Enhancing the Scholarship Fund is a Foundation priority.

The Foundation is governed by a board of directors whose members come from both the public and private sectors in Northern Virginia. A small staff manages day-to-day operations. The Foundation is located at 7630 Little River Turnpike, Annandale, Virginia 22003, 703-323-3023.



## Alumni Federation

Established in June 1983, the Northern Virginia Community College Alumni Federation comprises graduates and former nongraduate students who achieved 30 credits or more at NOVA.

The federation seeks to advance the growth and development of the College; to promote the personal, educational, and professional development of alumni; to promote meaningful relationships between alumni and current students; and to establish, encourage, and maintain a mutually beneficial relationship among the College, its alumni, and the Northern Virginia community.

Federation policy is formulated by a Board of Governors, elected annually by the membership; Federation management and operation is under the supervision of the assistant director of the Educational Foundation. Active committees include Publications, Scholarships, Awards, Programs, Nominations-Elections-Bylaws, and Alumni Senate. Those who have an interest in the Alumni Federation should contact *alumni@nvcc.edu*.

## Grants Development

The College recognizes the importance of grants development and has committed resources to seek funding. The director of Grants and Special Projects assists administrators, faculty, and staff in identifying funding sources targeted to particular areas of interest; interacts with program officers; and assists in the preparation of grant proposals and in the administration of funded projects.

Outside funding is pursued in such areas as workforce development, professional development, purchase of equipment, student services, and curriculum development.

# ADMISSION INFORMATION

## Student Classifications

### Curricular Student

Individuals are classified as curricular students when they declare a major, that is, when they are admitted to a curriculum of the College. The student must be a high school graduate, have earned a General Educational Development (GED) diploma, have completed an approved developmental program, or have been otherwise determined qualified for admission. The applicant's academic record must contain all of the information required for admission to the College. A curricular student may be either a full time or part-time student working toward completion of a certificate or associate degree at the College.

### Noncurricular Student

Students who have not requested admission to a curriculum may still enroll in courses by identifying the reason for enrolling at NOVA. Students are expected to declare a major prior to completing 30 credit hours of coursework. Students may be classified as noncurricular for purposes of the following:

- upgrading employment skills for one's present job
- developing skills for a new job
- exploring a new career
- seeking personal satisfaction or general knowledge
- taking developmental studies courses

Other noncurricular students may include the following:

- a transient (visiting) student. Such students may be enrolled at NOVA while maintaining primary enrollment with another college or university.
- a nondegree transfer student. Such students may be enrolled at NOVA to take only a certain number of courses for transfer to another college or university prior to completing the graduation requirements of a specific curriculum at NOVA.
- a high school junior or senior or the home school equivalent. (Please see the section on "Dual Enrollment" later in this chapter.)
- a student with general or curricular requirements pending. The student may not have met all of the general or specific admission requirements as stated in the College *Catalog* but may be accepted by the College to take courses for one semester only, with approval from the College.
- a student whose desired program has restricted enrollment. The student may meet admission requirements of a specific curriculum but be temporarily denied entry because of an enrollment limitation. The student may enroll in other courses while waiting for entry into the chosen curriculum, with approval of the College.

### Full-Time Student

A full-time student is enrolled in 12 or more credits of coursework in a semester or during the summer.

### Part-Time Student

A part-time student is enrolled in fewer than 12 credits of coursework in a semester or during the summer.

## Admission Procedures

### Admission to the College

Individuals who have a high school diploma or the equivalent, or are at least 18 years of age and are able to benefit academically from enrollment as demonstrated by assessment in reading, writing, and mathematics, are eligible for admission to Northern Virginia Community College. Minimum assessment scores can be found in the "Placement" section of this *Catalog*. Exceptions to this policy may be made by the College president only for documented reasons.

High school and home schooled students may be eligible to enroll in certain dual enrollment courses. (See the section on "Dual Enrollment.")

The College welcomes transfer students from other colleges. Those who meet NOVA's admission requirements may be admitted with no restrictions.

All applicants must complete the Application for Admission. A Social Security number is requested, but not required. Students are accepted on a first-come/first-served basis, except in restricted programs or when enrollment must be limited. In such cases, priority will be given in the following order:

1. legal residents domiciled in the cities and counties supporting the College
2. other Virginia legal residents
3. out-of-state applicants
4. international students requiring Form I-20

For certain health technology programs, "counties supporting the College" may include those in which clinical affiliates have contractual agreements with NOVA.

It is even more important for individuals to apply early to the College if they are interested in being admitted to a particular curriculum. High school transcripts are not generally required, but are useful for academic advisement to better ensure success in a chosen curriculum and to evaluate for college-level courses. Transcripts may be required in some cases, i.e., prior to dual enrollment, or to verify prerequisites for college-level courses.

High school transcripts are required in order to be considered for admission to the Veterinary Technology, Dental Hygiene, and Nursing Programs. Transcripts are preferred for the Emergency Medical Services Programs. Contact the appropriate campus Student Services Center regarding admission to these programs.

The Application for Admission is available online at [www.nvcc.edu](http://www.nvcc.edu). For those with no computer access, paper forms are available at any campus Student Services Center. Applicants are urged to submit their Application for Admission to the College at least 30 days prior to the first day of classes for the semester in which they plan to enroll. This should provide incoming students with the opportunity to attend the New Student Orientation or meet with a counselor for academic assistance prior to enrollment, and give them time to take required placement tests.

The College reserves the right to evaluate Applications for Admission, document special cases, and to refuse or revoke admission if the College determines that the applicant or student is a threat, is a potential danger, is significantly disruptive to the College community, or if such refusal is considered to be in the best interest of the College. Students whose admission is revoked after enrollment must be given due process. Applicants who have been expelled or suspended from, or determined to be a threat, potential danger, or significantly disruptive by another college will not be admitted to NOVA.

Individuals who enroll as a student at NOVA accept the rules and regulations of the College. Any violation will be subject to appropriate action by the College. All NOVA policies are superseded by VCCS policy.

### **Readmission to the College**

Former NOVA students who have not been enrolled for three years (nine consecutive terms) and wish to return to the College must also complete an Application for Admission to reactivate their records.

### **Reinstatement as a Result of Military Service**

Students who are called to active duty or mobilized shall be given a reasonable opportunity to be reinstated in the same program of study if they return to NOVA after a cumulative absence of not more than five years, so long as they provide notice of intent to return within three years after the completion of the period of service.

### **Admission to a Curriculum**

Students may be placed in no more than two degree programs, and placement in certificate programs should be limited. While students are permitted to

change programs, they should be removed from programs that they are not going to complete.

Apart from the general admission requirements for acceptance by the College, some curricula have additional requirements for admission; these are listed in the “Programs of Study” section of this *Catalog*. Students should check the curriculum of their choice to see if they have met the required prerequisites for enrolling in that curriculum. Those who do not meet these requirements may be able to make up deficiencies by taking developmental or other courses.

To change from one curriculum to another, students must contact their academic advisor or a counselor.

### **Readmission to a Curriculum**

Students who wish to be readmitted to a restricted program after nonattendance for at least one year must consult the specific program listing under “Programs of Study” for detailed readmission requirements. Students who were placed in a nonrestricted program will not have to reapply for admission to their curriculum; however, students should check to see whether the program requirements have changed since their last attendance.

### **Dual Enrollment of High School and Home Schooled Students**

Dual enrollment allows students to earn College credit while still in high school. High school juniors and seniors, or the home school equivalent, may be able to take NOVA courses if they meet admission and placement requirements. Students may be able to use some dual enrollment courses to meet both College and high school graduation requirements, but students may choose to take courses for College credit only. Dual enrollment courses are college courses, so they have college-level content and include college-level discussions. Students who take a dual enrollment course will have a NOVA transcript that documents the course(s) taken and the grade(s) received.

In addition, highly qualified students who meet stringent admission criteria may be able to complete a General Education certificate or degree while in high school. Students interested in this opportunity should consult with their school directly.

### **High School Students**

High school juniors or seniors may take dual enrollment courses at a NOVA campus or center, through the Extended Learning Institute, or take NOVA courses taught at their high school. Exceptions may be considered for freshman and sophomore students



who are able to demonstrate readiness for college-level coursework through the College's established institutional policies. Because enrolling freshman and sophomore students is considered exceptional, each freshman and sophomore student will be considered on a case-by-case basis and require formal approval by the College president. It is required that all prospective dual enrollment students meet established institutional placement criteria prior to enrolling in dual enrollment coursework. (See section on "Placement.")

The College also has dual enrollment agreements with local public school systems and private schools whereby some dual enrollment classes are taught at some high schools during the school day. These classes are arranged each semester with the high school administration. Students should contact their high school counselor for more information about dual enrollment courses that may be offered at their high school.

### **Home Schooled Students**

Students who are a home schooled equivalent of a high school junior or senior may be eligible to take courses at a NOVA facility or through the Extended Learning Institute. Dual enrollment is considered enrichment to the home school program and cannot substitute for the home school experience.

### **Admission Procedures for Dual Enrollment Applicants for dual enrollment at a NOVA facility**

These students should complete the online application available at [www.nvcc.edu](http://www.nvcc.edu) at least 30 days in advance of the start of the class. They must also submit a Dual Enrollment Recommendation Form (125-207) or Dual Enrollment for Home Schooled Students Form (125-208) once the online application is completed. These forms can be found online at [www.nvcc.edu/forms](http://www.nvcc.edu/forms). The campus dean of students or his/her designee will review the forms.

These forms include a place to list any NOVA courses the student wishes to use to fulfill Virginia high school graduation requirements. The student's parent or guardian must sign the form to indicate he/she believes the student is ready for college courses. In addition, the student's high school principal and high school counselor must sign the form to indicate that they believe the student is ready for college-level work and that the district will accept appropriate coursework for high school credit. Home schooled students must provide either a copy of a current signed home school agreement between the appropriate school system and the authorizing parent or guardian or a letter from the parent or guardian declaring home school for religious exemption.

Before final approval of a dual enrollment request is granted, students who wish to take classes at a NOVA facility must meet with a NOVA counselor and/or dean of students at the campus they plan to attend at least two weeks before the start of classes. First-time dual enrollment students must bring a sealed official high school transcript to the meeting. Returning dual enrollment students will have their NOVA transcript or course progress reviewed prior to approving or denying future reenrollments at the College. All students must meet admission and course placement requirements and/or prerequisites.

Dual enrollment students who take classes at a NOVA facility must register for College classes in person. The entire enrollment process, including registration, must be completed before the first day of class. Payment must comply with the payment due date for the semester as established by the College.

#### **Applicants for a dual enrollment course at their high school**

These students should talk with their guidance counselor. The entire application, testing, permission, and payment process will be handled within the high school.

#### **Applicants for a dual enrollment course offered through NOVA Online**

Students who wish to take a class through NOVA's online learning division should submit the necessary documentation to a NOVA Online counselor ([elicounselors@nvcc.edu](mailto:elicounselors@nvcc.edu) or 703-323-2425) and follow the instructions on the NOVA Online web page: [http://eli.nvcc.edu/doc/Dual\\_Enrollment\\_ELI\\_Checklist.pdf](http://eli.nvcc.edu/doc/Dual_Enrollment_ELI_Checklist.pdf). Requests by dual enrollment students to enroll in NOVA Online are handled on a case-by-case basis.

#### **Policies on Dual Enrollment**

The following policies will apply to all dual enrollment high school and home schooled students:

- The College reserves the right to evaluate applications for admission and to refuse admission to applicants when it is considered to be in the best interest of the College. Factors in a student's academic or personal record may be considered as a part of approving or denying a dual enrollment request.
- Dual enrollment students must meet admission requirements, which include demonstrated proficiency in reading, writing, and mathematics as established by the Virginia Community College System. See section on "Placement" in this *Catalog* for further information.
- Dual enrollment students must meet all course

prerequisites. Dual enrollment students should also review "Placement Testing" under the "Placement" section of this *Catalog* for additional information.

- Dual enrollment students are not eligible for financial aid through NOVA.
- Dual enrollment students are not permitted to enroll in developmental courses.
- Dual enrollment students are not allowed to audit courses.
- All NOVA students, regardless of age, are subject to all of the rules, policies, and procedures of the College pertaining to attendance, confidentiality of records, conduct, etc., as found in the College *Catalog* and the *College Student Handbook*.

For more information consult the dual enrollment manual, found at [www.nvcc.edu/dual-enrollment/](http://www.nvcc.edu/dual-enrollment/). The manual provides all the information needed to enroll in a dual enrollment class at a NOVA facility, through NOVA Online, or at a local high school.

#### **International Students**

NOVA welcomes all international students. To be admitted, all applicants must complete the Application for Admission available online at [www.nvcc.edu](http://www.nvcc.edu). When an online application is completed, the student will receive a student identification number (SIS number).

#### **Student Visas (F-1 or Other Visa Categories)**

All international students from abroad and inside the United States must request an I-20 from NOVA using their assigned SIS number. For complete details on the I-20 for academic programs or intensive programs, please visit [www.nvcc.edu/admissions/apply/international/index.html](http://www.nvcc.edu/admissions/apply/international/index.html).

Students in other visa categories will need to visit a Student Services center on campus to provide evidence of their legal status before registering for classes. If students in other visa categories have questions about how their status might affect their studies, please contact the Office of International Students at [OISS@nvcc.edu](mailto:OISS@nvcc.edu).

#### **International Student Success**

International students at NOVA are required to attend an International Student Symposium, a New Student Orientation and a First Year Student Orientation, and to meet with a counselor for academic assistance prior to enrollment in classes.

Students may need to provide the documents below:

- Official High School Transcript
- College transcripts for those who have attended college
- Standardized Test Scores such as TOEFL or IELTS



## Undocumented Students

It is the policy of Northern Virginia Community College to admit to those applicants who are residing in Virginia and have graduated from a Virginia high school with a high school diploma or equivalent, even if they are not able to document their legal presence. Those who are unable to provide evidence of legal status will not be eligible for in-state tuition.

## Senior Citizens

The *Virginia Senior Citizens Higher Education Act of 1974* and amendments allow senior citizens to take classes at no charge under certain circumstances. Individuals who are 60 years of age or older and have been legally domiciled in Virginia for one year prior to the beginning of the semester in which they enroll may qualify to attend credit and many noncredit classes at NOVA without paying tuition.

- Such individuals may take a credit course for free on a space-available basis if their taxable income did not exceed \$23,850 in the previous year.
- Regardless of income, senior citizens may take a credit course for free if they audit (do not receive a grade).
- They may take a noncredit, workforce development course for free if space is available. To enroll in noncredit courses, contact the Workforce Development Office at the campus where the course is being offered.
- For all courses, senior citizens must complete both an Application for Admission and the Senior Citizen Certification of Eligibility for Free Tuition Form (105–088).
- Senior citizens may enroll in ELI courses at any time, if there is available space.
- To audit an ELI online learning course, senior citizens must have the instructor's permission.

Senior citizens may register beginning the last business day before the session begins unless they pay tuition. NOVA has various start dates throughout each term. However, senior citizens who have completed 75 percent of their degree requirements may enroll at the same time as tuition-paying students. Tuition-paying students are accommodated in courses before senior citizens participating in this program are enrolled.

- Senior citizens who apply for free tuition AFTER registering and paying for a class are not eligible for a refund for that class.
- Senior citizens will still be expected to pay all course expenses other than tuition, such as art, music and laboratory fees, by 5:00 p.m. the day after registration.
- Audit and noncredit enrollment is limited to three courses in one term.

- The College reserves the right to cancel any class.

Complete information is available on the NOVA Senior Citizens' web page. <http://www.nvcc.edu/admissions/apply/seniors.html>.

## Admission Testing

Individuals 18 years of age and older who do not have a high school diploma or the equivalent are required to undergo assessment testing in reading, writing, and mathematics and achieve the following scores or placements:

	Virginia Placement Test	COMPASS	ASSET
Reading	ENF 1	62	35
Writing	ENF 1	32	35
Mathematics	MTE 1	25	33

Dual enrollment students also must demonstrate college readiness for admission to the College. See the section on "Dual Enrollment Students" later in this section.

## Visiting (Transient) Students

Students currently enrolled at four-year colleges and universities may enroll in most NOVA courses without taking a placement test to determine readiness to do college-level work. Such "transient" or visiting students maintain their primary enrollment with the four-year college or university (home institution) and elect to enroll at NOVA for the limited purpose of taking one or more classes. Students must provide specified documentation showing current enrollment or admission to a four-year college or university. In some cases, documentation will be required to show successful completion of course prerequisites. Full information and directions are available at <http://www.nvcc.edu/admissions/apply/visiting-students.html>.

## NOVACONNECT Student Information System (SIS)

NOVACONNECT is the name for the College's Student Information System (SIS). Access to NOVACONNECT requires an Internet connection, a web browser, and a Student ID number. NOVACONNECT allows students to complete many business transactions with the College online. Students will be able to access NOVACONNECT by clicking on "My NOVA" located on the home page of NOVA's website. Through NOVACONNECT, students can do the following:

- register for and drop classes
- search for classes by availability, day, instructor,

- and location
- view and print their class schedule
- use the academic planner for future course selections based on one's degree requirements
- find their priority registration date
- check their advisement report
- review grades and print unofficial transcripts
- request an official NOVA transcript
- view a transfer credit report
- view advisor information and e-mail an advisor
- view course/grade history
- view an account summary, including tuition and fees
- make a payment by clicking "Go to QuikPAY"
- check financial aid eligibility status
- apply for financial aid
- review their financial aid award
- view their financial aid history
- update personal information, such as addresses and phone numbers
- submit an application for graduation

For a complete list of functions available through NOVACONnect, students can view tutorials at [www.nvcc.edu/novaconnect](http://www.nvcc.edu/novaconnect).

### Student ID Number

The Student ID will be used throughout a student's NOVA College career to identify him or her in NOVACONnect and the student's College records. NOVACONnect assigns a seven-digit Student ID number at the time a student applies for admission.

### Social Security Number

The student's Social Security number is not required as part of the student record, so it will not be used as a Student ID number. A Social Security number is requested, but not required, when completing the Application for Admission. Students must, however, submit their Social Security number to receive financial aid or military/veterans benefits.

For students who receive financial aid, the Social Security number will be used in connection with federal financial aid applications such as Pell Grants, and deferments for previous student loans.

### Identification Cards (NOVACard)

Student photo identification cards, NOVACard IDs, are provided to credit-seeking students through the Student Life fee. The cards are distributed through campus NOVACard Offices. Students should wait 24 hours after first registering for classes before going to a campus NOVACard Office to obtain an ID card. ID cards may be required for library material use, admissions to special student activities, and so forth. There is a fee to replace lost cards. Contact a campus NOVACard Office for more information.

### Student Records Access

The College enforces Public Law 93–380 in providing for the privacy of official student records and the rights of students to review these records. Students may review their official records by making a request to the Student Services Center. NOVA will not release any personally identifiable information other than directory information about a student without his or her permission, except to certain school and governmental officials as required by law.

As required by state law (SB559/HB984, §23–2.2:1), the VCCS provides the Virginia State Police with the following information about all students within seven days of their acceptance to the College: the student's full name, Social Security number, date of birth, and gender. The State Police compare this information to the Virginia Criminal Information Network, as well as the National Crime Information Center Convicted Sexual Offender Registry File.

Requests by individuals and agencies for release of student information must be presented in writing. A student's permission for the College to release any information must also be in writing. Information that is considered directory (public) information is described in the current issue of the College *Student Handbook*.

### Campus of Record

Once admitted to the College, students may take courses at any campus or through NOVA Online, though some majors and some courses are offered only at selected campuses. Most students identify with one campus as the place where they obtain services, such as counseling, academic advising, participation in activities, testing, etc. Academic advising should be sought at a campus that offers the student's intended major. This is especially true of restricted programs, such as Allied Health, Nursing, and Veterinary Technology. Questions about where or how to use the services of the College should be directed to the Student Services Center at any campus.

# PLACEMENT

## English Language Requirement

Students are required to demonstrate a specified level of English proficiency in order to enroll in most College credit courses. Regardless of course selection and unless a student has demonstrated English proficiency through previous standardized testing, all students will be required to take an English placement test prior to registering for the 16th credit.

Students who do not speak English as their primary language will take a placement test to assess their readiness for college-level English. This test is different from the test for native speakers of English because it places students into special English as a Second Language (ESL) courses, which address common weaknesses specific to ESL students.

See “Placement Test Alternatives,” which follows.

## Placement Testing

NOVA administers tests to assess an individual’s college readiness and placement in certain courses. Such tests are intended to assist students in selecting courses and designing an academic program in which they will most likely be successful. These tests are administered through the Testing Center at each campus. Students are encouraged to take placement tests in English and mathematics before enrolling in classes.

Prior to testing, students must have submitted an Application for Admission to the College.

Students with scores on any required placement test that are below the specified minimums must complete prescribed developmental studies or English as a Second Language (ESL) course(s). The course(s) required will be determined by the student’s scores. These requirements apply to all campuses and NOVA Online, unless specifically waived by the responsible academic dean.

The following students must take an English placement test, unless they are enrolling in one of the courses listed under “Placement Test Alternatives”:

- students who have a cumulative grade point average (GPA) of less than 2.00 after the completion of 9 semester hours at NOVA;
- students who are transferring to NOVA with a cumulative GPA of less than 2.00 (regardless of the number of hours completed);
- students who plan to enroll in dual enrollment classes; and

- students who entered NOVA in the Fall 2002 semester or later, regardless of the GPA, prior to registering for the 16th credit.

A math placement test is required to enroll in college-level math classes, unless the student meets exemptions as outlined in the following section.

## Placement Test Alternatives

### English Placement Test Alternatives

Students who have taken the SAT, ACT, GED, or TOEFL IBT within the last five years may be considered eligible for ENG 111; or, ENG 111 co-enrolled with ENF 3; without having to take the Virginia Placement Test for English.

- Students with a minimum score of 480 on the English Evidence Based Reading/Writing SAT are eligible for ENG 111 (applies only to SATs taken after March 2016).
- Students with a score between 460 and 479 on the English Evidence Based Reading/Writing SAT are eligible for ENG 111 co-enrolled with ENF 3 (applies only to SATs taken before March 2016).
- Students with a minimum score of 500 on both the Critical Reading and Writing portions of the SAT taken before March 2016 are eligible for ENG 111.
- Students with a minimum combined score of 18 on both the English and Reading ACT are eligible for ENG 111.
- Students with a combined score between 15 and 17 on both the English and Reading ACT are eligible for ENG 111 co-enrolled with ENF 3.
- Students with a GED English score of 165 or above are eligible for ENG 111.
- Students with a score of 95 or higher on the TOEFL IBT are eligible for ENG 111
- Under certain circumstances, new students (starting in Summer or Fall 2018) who have graduated from high school within the last 5 years and took English 12 their senior year may be considered eligible for ENG 111 or ENG 111 co-enrolled with ENF 3.
  - With a high school GPA of 3.0 or higher, these students may be eligible for ENG 111.
  - With a high school GPA of 2.7-2.9, these students are eligible for ENG 111 co-enrolled with ENF 3.

In addition, the following students may be eligible for credit for ENG 111 and may not need to take the placement test:

- students with a satisfactory score on AP, IB, Cambridge Advanced Level, or CLEP exams.

Many courses require placement into ENG 111 as a prerequisite.

The following courses are exempt from the English placement test requirement:	
ADJ	100
ART	121, 122, 131, 132, 153, 154, 221, 222, 231, 232, 241, 242, 243, 244, 271, 272, 277
CIV	171, 172
MUS	101, 102, 131, 132, 136, 138, 141, 142, 145, 148, 149, 155, 159, 163, 164, 165, 175, 185, 231, 232, 236, 237, 238, 241, 242, 245, 248, 249, 255, 259, 265, 275, 285
PED	all courses except 116 and 220
SDV	100, 101, 107, 109 (other SDV courses are not exempt)

### Math Placement Test Alternatives

Students who have taken the SAT, ACT, or GED within the last five years may be considered eligible for certain Math courses without having to take the Virginia Placement Test for Math.

- Students with a score between 510 and 529 on the SAT Math, or, a score between 19 and 21 on the ACT Math; are eligible for: MTH 111, MTH 133, and MTH 154.
- Students with a score of 530 or above on the SAT Math, or, a score of 22 or above on the ACT Math; are eligible for: MTH 111, MTH 133, MTH 154, MTH 161, and MTH 167. These students are also eligible to take the calculus-only VPT to determine if placement in MTH 245, 261, or 263 is appropriate.
- Students with a GED Math score between 155 and 164 are eligible for MTH 111 and MTH 133.
- Students with a GED Math score of 165 or above are eligible for MTH 111, MTH 133, and MTH 154.
- Math placement based on high school transcript is dependent on both GPA and math courses taken in high school. Students should meet with an advisor to determine this placement.
  - Students with a high school GPA of 3.0 or higher and have taken Algebra I are eligible for MTH 111 and MTH 133.
  - Students with a high school GPA of 3.0 or higher and have taken Algebra II are eligible for MTH 111, MTH 133 and MTH 154.
  - Students with a high school GPA of 2.7 – 2.9 and have taken Algebra II are eligible for MTH 154 with MCR 4.
  - Students with a high school GPA of 3.0 or higher and an algebra intensive course are eligible for MTH 111, MTH 133, MTH 154, MTH 161, and MTH 167.

- Students with a high school GPA of 2.7 – 2.9 and an algebra intensive course are eligible for MTH 161 with MCR 6.
- Algebra intensive courses include Trigonometry, Math Analysis, Pre-Calculus, Calculus, Algebra III, Discrete Mathematics, Probability and Statistics, and AP Statistics. An advisor can help you determine if the math class you took in high school are “algebra intensive.”

Once a student has started an ENF, ENG, ESL, MTT or MTH class, the student cannot be reevaluated for placement based on SAT, ACT, or GED scores; or high school transcript.

A placement test may still be required, dependent on the mathematics requirements in the student's academic plan.

### Duration of Test Score Validity and Test Retakes

Virginia Placement Test for English scores are valid for five (5) years from the date of the test. Students who take the English placement test and who do not enroll in a developmental English course are allowed to take one retest within 12 months. Students who attempt a developmental English course will be ineligible for a retest. Exceptions to this retest policy may be made on a case-by-case basis in accordance with established College procedures.

Accuplacer English as a Second Language (ESL) scores are valid for 12 months. Students may attempt the test a second time after six months only if the student originally placed in to Level 1. Students who place in to Level 2 or above on their first attempt must wait 12 months to attempt the test a second time.

Virginia Placement Test for Math scores are valid for five (5) years from the date of the test. Students who take the placement test and who do not enroll in a developmental or college level math course are allowed one (1) retest within the twelve (12) months following their original test date. Students who enroll in a developmental or college level math course after their first test attempt will be ineligible for a retest. Academic deans may grant exceptions to this policy on a case-by-case basis.

## Dual Enrollment Students

In order to be admitted to dual enrollment classes, all students must demonstrate college readiness by meeting the following placement or scoring criteria:

Admission Criteria for Transfer Courses							
	Virginia Placement Test	COMPASS	ASSET	PSAT	SAT	ACT	SOL
English/Writing	ENG 111	76	43	N/A	N/A	18	N/A
Reading	ENG 111	81	42	N/A	N/A	18	N/A
Writing/Reading	ENG 111	N/A	N/A	390	480	N/A	N/A
Mathematics	MTE 1	25	33	500	530	22	Algebra I – pass
Admission Criteria for Non-Transfer-Oriented Courses							
	Virginia Placement Test	COMPASS	ASSET	PSAT	SAT	ACT	SOL
English/Writing	ENF 1	32	35	N/A	N/A	18	N/A
Reading	ENF 1	62	35	N/A	N/A	18	N/A
Writing/Reading	ENF 1	N/A	N/A	390	480	N/A	N/A
Mathematics	MTE 1	25	33	500	530	22	Algebra I – pass

Alternatives to all testing requirements are stated previously under “Placement Text Alternatives.”

### Testing Centers

A government-issued photo identification, such as a driver’s license, is required at the Testing Center to take the tests. Students will not be permitted to take backpacks, coats, or other personal effects into the Testing Center.

For information about testing or testing accommodations, contact a campus Testing Center, Student Services Center, or visit [www.nvcc.edu/testing](http://www.nvcc.edu/testing).

NOVA Online students may use any of the NOVA campus Testing Centers. Some placement testing for NOVA Online students may be arranged to be administered outside the Northern Virginia region. Contact NOVA Online registration at [elireg@nvcc.edu](mailto:elireg@nvcc.edu) or call 703–323–3368 for more information.



# ENROLLMENT INFORMATION

Before enrolling in classes, an individual must be admitted to the College. Refer to the *Schedule of Classes* at [www.nvcc.edu/schedule](http://www.nvcc.edu/schedule) for specific instructions on how and when to register.

Students may register by using NOVACONnect at [www.nvcc.edu/novaconnect](http://www.nvcc.edu/novaconnect), the online Student Information System. Individuals who do not have their own computer with web access are welcome to use the computers at any NOVA campus or other location, such as at a public library. The Student Services Center at each campus also has staff members who can assist with registration.

## Registering, Dropping, or Withdrawing from Courses

Schedule changes are effective at the time they are processed.

### On-Time Registration

NOVA has an On-Time Registration Policy: All students must register prior to the start of their course. Registration in SIS ends at 11:59 p.m. the day before a session begins. Students who register after that day and time must go to a campus in person to sign up for a course that has open seats and has not started yet. Once students register, they have until 5:00 p.m. the next business day to pay for the course. Students cannot register for a class that already started and cannot add/swap a class once it has begun. Any schedule adjustment needed after a course has begun requires permission from the academic dean.

### Dropping a Course

Students may drop a course and receive a refund up until the “last day to drop with a tuition refund (census date)” as noted on the academic calendar. Students who change their mind about taking a course must drop the course and process the drop online through NOVACONnect. Otherwise, the student will be charged for the course and may receive a failing grade.

### Cancellation of a Section or Course by the College

The College may cancel a course or section for any reason. Students enrolled in a canceled course or section will receive a tuition refund unless they transfer to another course. The number of credits for the replacement course will determine whether a student owes the College additional tuition or is entitled to an adjusted refund.

### Administrative Deletion

Students who enroll in a course are expected to attend every class. Students who do not attend at least one class meeting or participate in an online learning class by the “last day to drop with a tuition refund (census date)” will be administratively deleted from the class. This means that there will be no record of the class or any letter grade on the student’s transcript. Furthermore, the student’s class load will be reduced by the course credits, and this may affect his or her full-time or part-time student status. This, in turn, can impact financial aid, veterans benefits, and F-1/M-1 status. The student’s tuition will not be refunded.

### Withdrawal from a Course

Students may withdraw from a course within the first 60 percent of a session without academic penalty and will receive a grade of “W.” Students may withdraw from a course through NOVACONnect or by completing a Withdrawal Initiated by the Student Form (125–047) and submitting it to the Student Services Center. Instructions for withdrawal from a course are outlined on the 125–047 Form. Withdrawal after the first 60 percent of the session will result in a grade of “F,” except under mitigating circumstances that must be documented on the course withdrawal form, approved by the instructor and dean, and submitted to the Student Services Center. Students may only withdraw after the 60 percent point if they are in good academic standing in the class. This documentation will be retained electronically. See “Grading System” in the “Academic Policies and Information” section for an explanation of grades. The student’s money will not be refunded for courses from which he or she withdraws. To obtain a refund, students must have dropped the classes within the published tuition refund deadlines.

### Medical/Emergency Withdrawal

A student may request a voluntary withdrawal from the College for emergency and severe medical and/or psychological reasons. Examples of situations that may fall into this category include

- an extended illness or major medical issue occurring during the semester the student is registered which requires hospitalization, is life-threatening, or is contagious and a danger to the remainder of the College community. The student must have been absent more than 10 percent of the session length. A written verification by the attending physician is required.
- a psychiatric/psychological emergency or severe, extended illness occurring during the semester the student is registered which requires hospitalization

or that prevents the student from attending classes. A written verification by the attending mental health therapist is required.

- death of the student or a member of the student's immediate family (mother, father, sister, brother, husband, wife, or child).

The student will complete the Withdrawal Initiated by a Student Form (125-047) with appropriate documents attached. The form will be submitted to the Office of the Dean of Students. If the withdrawal is approved, a grade of "W" will be assigned to the student's records. Any documentation from medical or mental health personnel should be detailed enough for the dean of students to make an informed determination. Students may request

consideration for a tuition refund by following the Business Office procedures.

If the withdrawal is approved by the dean of students, the dean will forward the information to the registrar, financial aid (when appropriate), and the Business Office. The Office of the Dean of Students will notify the affected faculty that the student has been withdrawn.

### **Withdrawal Policy for Students with Federal Financial Aid**

Students who have received federal financial aid (Title IV) funds and have withdrawn from all their courses within the first 60 percent of their period of enrollment, or who drop, withdraw, or stop attending





a course while not simultaneously attending another are subject to the mandatory refund policy for federal student financial aid (Return to Title IV or R2T4). Students must complete an official withdrawal (Form 125–047) and submit it to the Student Services Center. Students must include their last date of attendance in the course. The current financial aid handbook outlining complete details may be found on the financial aid website at [www.nvcc.edu/financialaid](http://www.nvcc.edu/financialaid) or at any campus Student Services Center. Financial aid recipients who stopped attending all courses and did not complete the “official” withdrawal process, but who can produce an instructor-documented last date of class attendance (i.e., last exam, last paper, etc.), will have R2T4 calculated based upon their last reported date of attendance.

For financial aid recipients who stopped attending all their courses and their last date of attendance is unknown, the calculation of federal refunds returned will be based upon the midpoint (50 percent) of the period of enrollment. Students who did not attend beyond the census date of a course will have their financial aid recalculated based upon the enrollment level of courses in which attendance beyond the census date was established. Such students may be liable for repayment of federal funds.

Financial aid applicants who withdraw from courses may have difficulty subsequently in achieving the satisfactory academic progress standards for financial aid (see Satisfactory Academic Progress on the financial aid website or in the *Student Services Financial Aid Handbook*). Failure to follow established procedures could affect a student’s future eligibility for financial aid benefits.

### **Withdrawal as a Result of Military Service**

Military students who are mobilized or ordered to active duty, and request to be withdrawn from the College after the census date may contact their campus dean of students for assistance with the process of withdrawal from the College and tuition refund.

The military student needs to provide the dean with his/her name; Student ID number; and a copy of his/her military orders, deployment orders, or documentation indicating he or she must leave the area for service. If the service member used Tuition Assistance (TA), the service member must contact his/her military education counselor regarding dropping/cancelling TA due to military-related duties or assignments. If the military member used VA benefits, it is the member’s responsibility to contact the College veterans office that certified the course. If the member needs guidance through this process,

he/she should contact the Office of Military Services at [militaryservices@nvcc.edu](mailto:militaryservices@nvcc.edu).

### **Withdrawal by Students Receiving Veterans Benefits**

Students who have received any veterans benefits must also report their withdrawal to the veterans advisor. The Withdrawal Initiated by a Student Form (125–047) must include the student’s last date of class attendance. Failure to follow established procedures could affect his or her future eligibility for veterans benefits. For more guidance, contact any campus veterans advisor.

## **NOVA Online Enrollment**

Students may enroll in NOVA Online courses through NOVAConnect. Most courses have multiple sections starting throughout the semester. Details are available by calling NOVA Online at 703–323–3368 or checking the NOVA Online website.

Students taking their first online course at NOVA should also complete a NOVA Online orientation, offered via webinar on multiple dates and times around the start of each semester. Check the NOVA Online website or contact the NOVA Online Hotline at [elicoursespecialists@nvcc.edu](mailto:elicoursespecialists@nvcc.edu) or 703–323–3347 for registration information.

When registering for sequential courses, such as ENG 111 and ENG 112, students should sign up for only one course at a time.

## **Course Schedule Changes During the First Week of a Session**

NOVA has an On-Time Registration Policy: All students must register prior to the start of their course. Registration in SIS ends at 11:59 p.m. the day before a session begins. Students who register after that day and time must go to a campus in person to sign up for a course that has open seats and has not started yet. Once students register, they have until 5:00 p.m. the next business day to pay for the course. Students cannot register for a class that already started and cannot add/swap a class once it has begun. Any schedule adjustment needed after a course has begun requires permission from the academic dean. Dropping a course will change course load and can also impact financial aid benefits, veterans’ benefits, F-1 status, etc.

Schedule adjustments are allowed during the first week of classes ONLY if students have documented mitigating circumstances. Students who find themselves in this situation must talk to

the appropriate academic dean. Students will need to complete a Registration with Permission During the First Week of Class Form (125–077) and submit supporting documentation to the appropriate academic dean for approval. The academic dean is the only person who can grant permission for schedule adjustment. Tuition is charged for courses added.

Students who enroll in an entry-level regular course for which there is a preparatory developmental course and then have difficulty in keeping up with the regular coursework in the first week (7 calendar days) may, with the approval of the instructor, initiate a drop and enroll in a developmental course that is more suited to their current skills. This must be documented on a Registration with Permission During the First Week of Class Form (125–077) and approved by the academic dean. In making the transfer from the regular course to the developmental course, the student will be charged additional tuition on a per-hour basis for any additional credit hours. If the exchange results in fewer credit hours, the student qualifies for a tuition refund only if the transaction occurs before the last day to drop with a tuition refund for the session.

After in-class diagnostic testing in ENF, ESL, or MTT, students may transfer from one developmental course to the appropriate level course in the same discipline, as determined by the diagnostic. This transfer occurs during the first week of classes only with permission from the academic dean and should be documented on a Registration with Permission During the First Week of Class Form (125–077). No change in tuition occurs if the change from one developmental course to another developmental course occurs within the same discipline and the credit-hour values of the courses remain identical. Any credit hours that are added as a result of this course exchange will result in additional tuition on a per-hour basis. If the exchange results in fewer credit hours, the student qualifies for a tuition refund only if the transaction occurs before the last day to drop with a tuition refund for the session.

### **Course Section Changes After the First Week of a Session**

Students may request a change from one section to another of the same course within the same semester after the last day for a tuition refund for the session if they can justify mitigating circumstances. This justification must be recorded on a Change of Section After First Week of Session Form (125–014) and approved by the instructors of the sections involved and their academic dean. If such changes are approved, no additional tuition will be charged.

To change from a campus course to a NOVA Online course after the last day for a tuition refund, students

must receive approval from the academic dean, who will make the decision in consultation with NOVA Online. If the change is approved, there is no refund eligibility for the online course.

### **Hold on Student Records/ Service Indicators**

A hold or service indicator will be placed on a student's official record under certain conditions. Nonpayment of financial obligations, such as tuition, College fines, and other debts will result in a hold on the student's record. Disciplinary action, academic suspension, or dismissal may also result in a hold on one's enrollment. A hold will restrict a student from enrolling, having transcripts or grade reports issued, or receiving other College services.

### **Auditing a Course**

Students may audit a course and attend without taking examinations. The regular tuition rate is charged. Audited courses carry no credit and do not count as a part of one's course load, which will affect a student's status if he or she receives financial aid or veterans benefits or holds an F-1/M-1 visa. Students who wish to change status in a course from credit to audit or from audit to credit must complete the Auditing a Class Form (125–012) and have it signed by the instructor and the academic dean within the add/drop period for the course (no later than the census date). Students may also audit NOVA Online courses with the instructor's permission. The instructor may still require a certain level of attendance or completion of some assignments; students should follow the guidelines on the course syllabus or negotiate expectations with the instructor early in the semester.

Students who wish to earn credit for a previously audited course must retake the course by reenrolling in the course for credit and paying normal tuition to earn a grade other than "X." Advanced standing credit will not be awarded for a previously audited course.

Complete instructions for auditing a class can be found on Form 125–012, available on the College website.

# FINANCIAL INFORMATION

## Tuition

Tuition rates and deadlines are posted online at [www.nvcc.edu/tuition](http://www.nvcc.edu/tuition). There are several payment options available. Payment of tuition entitles students to use the library, bookstore, food services, student lounge, and other facilities of the College except for parking. (See [www.nvcc.edu/parking](http://www.nvcc.edu/parking) for information about parking.) Students must pay for any school property that they damage or lose, such as laboratory or shop equipment, supplies, library books, and materials.

Some courses, such as physical education, may require non-College support services from other agencies and individuals. Costs for these additional charges are paid by students directly to the individual or agency providing the service.

All tuition and most fees are approved by the State Board for Community Colleges, which has the authority to change any and all tuition and fees without prior notice.

## In-State Tuition Eligibility

To be eligible for in-state tuition rates, students must be domiciled in Virginia for a minimum of one year before the first official day of classes. When students apply for in-state tuition, they should be prepared to present documentation to support their claim. See the following “Domicile Requirements” section for details.

To change one’s tuition status from out-of-state to in-state the student must initiate the process by completing the “Domicile Determination Form” section of the Virginia Community College System Application for Admission Form (125–030), which can be obtained online at [www.nvcc.edu/forms](http://www.nvcc.edu/forms) or at any campus Student Services Center. It must be completed and returned to the Student Services Center for review before the enrollment period begins for the semester in which the in-state charges will take effect.

The College reserves the right to collect the difference between in-state and out-of-state tuition charges when the wrong tuition rate is paid. The Student Services Center on any campus can assist with questions concerning domicile status.

## Domicile Requirements

All applicants for admission to Northern Virginia Community College are required by the Code of Virginia, 23–7.4, to complete the “Domicile

Determination Form” section of the Application for Admission Form (125–030).

To be eligible for in-state tuition, an individual must be domiciled in Virginia for a minimum of one year before the first official day of classes. Domicile is defined as an individual’s “present, fixed home where you return following temporary absences and where you intend to stay indefinitely.” In essence, domicile has two parts and an individual must meet both to qualify for in-state tuition. The individual must reside in Virginia and must intend to keep this as his or her home indefinitely.

Regardless of other factors such as dependency, non-U.S. citizens on most temporary visas, in restricted classifications, or undocumented are not eligible to establish Virginia domicile and eligibility for in-state tuition. Students who are in the United States under Temporary Protected Status (TPS) are eligible to establish Virginia domicile.

In most cases, dependent students have the same domicile as their parents or legal guardian. Individuals are presumed to be a dependent of their parent or legal guardian if they are under the age of 24, unless they are a veteran or active duty member of the U.S. Armed Forces; are a graduate or professional student (beyond a bachelor’s degree); are married; are a ward of the court or were a ward of the court until age 18; have no adoptive or legal guardian when both parents are deceased; have legal dependents other than a spouse; or are able to present clear and convincing evidence that they are financially self-sufficient. Children and the dependent spouse of a Virginia domiciliary may be eligible for in-state tuition. Additional documentation may be required.

Dependent children who are U.S. citizens may be eligible to establish Virginia domicile separate from their noncitizen parents. They must present clear and convincing evidence that they are domiciled in Virginia and must provide documentation of their citizenship.

The College may review many factors and documents when determining an individual’s domicile. The following are some examples:

- residence during the past year prior to the first official day of classes
- state to which income taxes are filed or paid
- driver’s license
- motor vehicle registration
- voter registration
- employment
- property ownership



- sources of financial support
- other social or economic ties with Virginia and other states

However, the presence of any or all of these factors does not automatically result in Virginia domicile. The factors used to support a case for in-state tuition benefits must have existed for one year before the first official day of classes. Contact the Student Services Center at any campus for additional information. Students who have been denied in-state domicile status and wish to appeal should see the “Domicile/Tuition Appeal Process” online or contact a Student Services Center.

Students classified as out-of-state who can provide clear and convincing evidence that they were eligible for Virginia domicile on the first day of class for a term may have their tuition status changed for the current term. Students should follow the institution’s domicile appeal policy.

In the event that a student’s circumstances change after a semester has begun, the student may be eligible for reclassification of his/her tuition status. This reclassification shall be effective for the next academic semester or term following the date of the application for reclassification. Students should follow the institution’s domicile appeal policy.

Changes that may occur later in one’s residence, tax payment status, auto registration, etc., must be reported to a campus Student Services Center. Failure to report changes that could affect an individual’s domicile and eligibility for in-state tuition could result in the College’s billing the student for tuition due and/or taking disciplinary action against him or her.

### **Domicile Information for Military Families**

The following is a summary of the State Council of Higher Education for Virginia domicile guidelines, based on the Code of Virginia, 23–7.4, as they relate to active duty military personnel, their spouses and dependents, who may not otherwise qualify for in-state tuition privileges. These guidelines are subject to annual legislative review and change; normally changes take effect on July 1 of each year. See a campus Student Services Center for updated information and details.

#### **Active Duty Military Personnel (Service Members)**

Any active duty service members, activated guard or reservist members, or guard or reservist members mobilized or on temporary active orders for six months or more, that are either stationed or assigned by their military service to a work location in Virginia, and reside in Virginia, are eligible to

pay tuition at the in-state rate. Such individuals must complete the In-state Tuition for Active Duty Military and Dependents Living in Virginia Form (125–115) and take it, along with the documents specified on the form, to a campus Student Services Center to claim this benefit.

An active duty military service member may qualify for a waiver of the one-year residency requirement by electing to establish domicile in Virginia. The one-year residency requirement will be waived only if all other conditions for establishing domicile are met, including, but not limited to, Virginia resident income taxes on all income (Leave/Earning Statement showing Virginia tax withheld), Virginia State of Legal Residence Certificate (DD 2058), Virginia driver’s license, and Virginia vehicle registration. Copies of these documents must be provided by the student to claim eligibility for this waiver prior to the beginning of the semester/term for which in-state charges are requested.

#### **Military Spouses and Dependent Children**

The dependents of an active duty military person stationed in Virginia, the District of Columbia, or a state contiguous to Virginia, who reside in Virginia, are eligible for in-state tuition. Such individuals should complete the In-state Tuition for Active Duty Military and Dependents Living in Virginia Form (125–115) and take it, along with the documents specified on the form, to a campus Student Services Center to claim this benefit.

### **Military Benefits**

#### **Active Duty Tuition Assistance**

The College participates in the Armed Forces Tuition Assistance (TA) program. Tuition Assistance is a benefit paid to eligible members of the Army, Navy, Marines, Air Force, and Coast Guard. Congress has given each service the ability to pay up to 100 percent for the tuition expenses of its members. In the event that TA does not cover fees required by the College, the service member is responsible for paying the out-of-pocket fees. Each service has its own criteria for eligibility, obligated service, application processes, and restrictions. This money is usually paid directly to the institution by the individual services. For more information on using Tuition Assistance, students should contact their branch of service education office or NOVA’s Military Services Office at [militaryservices@nvcc.edu](mailto:militaryservices@nvcc.edu).

#### **Reserves and National Guard Tuition Assistance**

Members of the Selective Reserves are eligible for Tuition Assistance (TA). However, each of the Armed Forces determines how to administer their own Tuition Assistance. In addition, Virginia offers its National

Guard service members state-funded education incentives based on state guidelines and eligibility. For more information on using Tuition Assistance, students should contact their branch of service education office or NOVA's Military Services Office at [militaryservices@nvcc.edu](mailto:militaryservices@nvcc.edu).

### **Military Spouse Career Advancement Account (MyCAA)**

NOVA remains committed to the education of military members and their spouses. NOVA is an approved school for the Military Spouse Career Advancement Accounts (MyCAA) program. MyCAA allows select military spouses to receive financial assistance for licenses, certificates, certifications, or associate degrees (excluding General Studies and Liberal Arts) necessary for gainful employment in high demand, high growth portable career fields. For more information, contact MyCAA at <https://aiportal.acc.af.mil/mycaa/Default.aspx> or NOVA's Military Services Office at [militaryservices@nvcc.edu](mailto:militaryservices@nvcc.edu).

### **Military Survivors and Dependents Education Program**

Under the Military Survivors and Dependents Education Program, a child between the ages of 16 and 29, or spouse of a military service member killed, missing in action, taken prisoner, or at least 90 percent disabled may be eligible for education benefits. These benefits may include full payment of tuition, fees, room and board, and books at any state-supported college or university in Virginia. The veteran must have been a Virginia citizen at the time he or she entered the military or must have been a Virginia citizen for at least five years prior to the surviving dependent's Application for Admission. The program application may be downloaded at [www.dvs.virginia.gov/education-employment/virginia-military-survivors-and-dependents-education-program/](http://www.dvs.virginia.gov/education-employment/virginia-military-survivors-and-dependents-education-program/), or obtained by contacting the Virginia Department of Veterans Services, attn: VMSDEP, 101 N. 14th Street, 17th Floor, Richmond, VA 23219. The telephone number is 804-225-2083.

### **Veterans Benefits**

Most College degree and certificate programs are approved for training-eligible servicepersons, veterans, and dependents. Additional information is available from the veterans advisor on each campus.

Veterans and veteran's dependents may be eligible for educational benefits from the Department of Veterans Affairs. Students who wish to determine eligibility for veterans benefits should contact the Department of Veterans Affairs. Once eligibility is determined, such individuals should contact their campus veterans advisor each semester to complete

the necessary forms to establish and maintain their eligibility for benefits. Full-time educational benefits are available to those registering for and maintaining 12 or more credits in degree program courses. Three-quarter-time benefits are paid for 9 to 11 credits and half-time benefits are paid for 6 to 8 credits per semester. Active duty servicepersons and those registered for less than 6 credits are entitled to tuition reimbursement only. Certificate programs are measured differently for payment. Courses taken through NOVA Online and accelerated courses are also measured differently. See a campus veterans advisor for details.

Students who receive educational benefits must report their enrollment each semester to their veterans advisor. The information will then be certified and reported to the Department of Veterans Affairs Regional Office. Any changes to a student's enrollment must also be reported to the campus veterans advisor. Changes include canceled classes, dropped classes, withdrawing from classes, adding classes, or any other type of change that may affect one's eligibility to receive benefits from the Department of Veterans Affairs. Excessive absences may result in the student's dismissal from the course and adjustment of benefits from the Department of Veterans Affairs. Any change in status must be reported to the Department of Veterans Affairs as soon as possible, but no more than 30 days after the change has been officially completed at the College.

### **Satisfactory Progress Policy for Recipients of Veterans Benefits**

To be eligible for veterans educational benefits, students must maintain satisfactory academic progress in accordance with Northern Virginia Community College standards. The following standards must be met:

Students will be reported to the Department of Veterans Affairs as making unsatisfactory progress if their cumulative GPA falls below the required level based on the following:

<b>Regular Credits Attempted (A, B, C, D, F)</b>	<b>Minimum Cumulative GPA Requirement</b>
13-23 credits	1.50
24-47 credits	1.75
48 or more credits	2.00

This standard will be applied each term. However, students who do not achieve the above minimum cumulative GPA requirement, but do achieve a GPA of at least a 2.00 for the term being evaluated, may be certified for that term as making satisfactory progress.

When a student's academic record does not meet the above standards, the student will be notified in writing by the veterans advisor that his/her next term will be "probationary." The student will be required to meet with a counselor or academic advisor to develop a written plan to indicate how he/she will successfully complete his or her educational objective and how he or she will satisfy the GPA requirement for satisfactory progress toward graduation. This plan will be kept on file in the Veterans Office.

Those who do not meet the minimum cumulative GPA requirement or do not earn a minimum GPA of 2.00 for the probationary term will be reported to the Department of Veterans Affairs as making unsatisfactory progress. The student may be certified on a retroactive basis for the following term if he/she receives a minimum GPA of 2.00 for that semester. When the student's cumulative GPA meets or exceeds the minimum requirement, educational benefits will be restored on a regular basis.

If a student is subject to academic suspension, he/she must be reported to the Department of Veterans Affairs as making unsatisfactory progress. Benefits will not be resumed until the student is making satisfactory progress.

Questions regarding this policy should be addressed to the campus veterans advisor.

### **Survivors of Deceased Public Safety Officers of Virginia Tuition Benefits**

The Code of Virginia (Sec. 23-7.1:01) provides tuition benefits for certain children and spouses of deceased public safety officers. A student may be eligible for free tuition at the College if his or her parent or spouse was killed in the line of duty while employed in Virginia as a Virginia law enforcement officer; firefighter; rescue squad member; agent of the Department of Alcoholic Beverage Control; state correctional, regional, or local jail officer; sheriff and deputy sheriff; or a member of the Virginia National Guard serving in the Virginia National Guard or the United States Armed Forces. Children must be between the ages of 16 and 25. For more information on eligibility requirements and application procedures, students may contact any campus Student Services Center.

### **Tuition Payment**

Once students have registered for a class or classes, they have until 5:00 p.m. the next business day to pay. Classes are dropped if not paid by the next business day. Tuition is payable by credit card (Visa, MasterCard, or American Express) on NOVAConnect. Tuition is also payable by cash, check, money order, NOVA's Tuition

Payment Plan, contract, or approved financial aid (except Work-Study). The College accepts checks and money orders made out for the exact amount payable to the order of NOVA or NVCC. Checks made payable to the order of the College and the student are also accepted. The College can also accept wire transfer of funds from a bank to pay tuition. Students must contact a campus business manager for specific instructions. Without exception, all checks must include the student's name and identification number.

Students who expect their tuition to be paid through a contract or other agency or employer authorization agree to accept responsibility for the full amount of tuition if the tuition due is not otherwise paid within 30 days after invoice.

Students should not assume that they will be dropped automatically from classes for which they have not paid. Students must drop all classes they do not want to take and confirm their schedule of classes before the census date to assure their tuition costs are what they expect.

NOVA charges a penalty fee to anyone whose payment is dishonored. A dishonored check is any check returned because of insufficient funds, a stop payment, or any other reason. A dishonored credit card payment is one for which the College's account is debited. If a check is dishonored the student will be disqualified from paying by check for one year after the original debt and penalty fee are paid.

### **Tuition Refunds**

Tuition refunds are not automatic except when the College cancels courses.

Students may be eligible for a tuition refund or forgiveness of debt under some very special circumstances. To request a refund or forgiveness of tuition debt, students should contact the staff of a campus Business Office to determine the correct procedures to follow. Complete information about tuition refunds and forgiveness of debt can be found online at [www.nvcc.edu/payment/refunds.html](http://www.nvcc.edu/payment/refunds.html).

### **Fees, Charges, and Expenses**

#### **Books and Supplies**

Students are expected to obtain their own books, supplies, and consumable materials needed in their studies. A bookstore is located on each campus. Textbooks may be purchased new, used, or rented (selected titles only) from the store or online. Check the bookstore website at <http://nvcc.bnccollege.com> for each campus bookstore's hours of operation.

Students on financial aid may charge books following the procedures established by the Financial Aid Office.

### **Library Charges**

Library patrons are responsible for the replacement cost of any item they lose. Payments for lost materials are not refundable. This nonrefundable rule also applies to fines and replacement costs charged for materials borrowed from other libraries with a NOVACard Student ID.

Because access to high-demand reserve materials is critical, the College libraries charge fines for overdue reserve materials. Patrons returning regular reserve materials late will be charged a fine of \$2.00 per day. Patrons returning timed reserve materials late will be charged a fine of \$2.00 per hour. Timed reserve materials are those with specific time limits on their use in the Library. The maximum fine for keeping reserve materials late is \$80.00.

Patrons with overdue circulating or reserve items will not be able to check out additional materials until all overdue items are returned and fines paid. Continued enrollment and the release of transcripts will be prevented if overdue items are not returned.

### **Parking Fees**

Any student, full- or part-time, who wishes to park a vehicle in the student parking lots ("B" lots) on any campus during any semester, including Summer, must display a valid parking permit. A current NOVACard and valid parking permit are required to access the permit holder lanes at the Medical Education Campus garage. Hourly pay parking is also available at all campuses for those who do not have a current permit.

Permits may be purchased beginning May 1 for the Summer, August 1 for the Fall Semester, and December 1 for the Spring Semester. Students may purchase "B" parking permits online through the parking services website at [www.nvcc.edu/parking](http://www.nvcc.edu/parking). Permits purchased online will be mailed to the applicant's home address on record, and a temporary 21-day pass can be printed for use while awaiting mail delivery. Permit void unless hanging from the rearview mirror of the vehicle with the permit number facing the outside of the vehicle or displayed on the dashboard. Permit number must be fully visible.

The cost of a parking permit and hourly parking rates are specified on the parking website.

Parking enforcement on "B" lots will begin at 6 a.m. following the end of the schedule adjustment period. Campus signage will indicate specific dates. Parking regulations are enforceable 24 hours per day, seven

days per week. Students are not required to display a permit while parked in a "B" lot after 3:45 p.m. on weekdays or anytime on weekends.

Questions regarding parking on campus can be directed to a campus Parking Services Office.

### **Graduation**

There is no fee for graduation. However, students are required to purchase academic regalia, available at the campus bookstores, if they wish to participate in the Commencement ceremony.

### **Nonpayment of Debts**

Continued attendance at NOVA is dependent upon proper settlement of all debts owed the institution. Should a student fail to satisfy all due and payable amounts for tuition and fees, College loans, College fines, dishonored checks, or other debts owed the College, the student may be withdrawn from his or her courses. The student would be assigned "W" grades for his/her courses, and those will become part of the official transcript. When the debt is satisfied, the student may petition the dean of students to have the "W" grades removed and to be reinstated in his/her courses. Until all current debts have been satisfied, a hold will be placed on the student's records, and he or she will receive very limited College services. See "Holds on Student Records/Service Indicators."

If the College has agreed to accept tuition payment from a student's employer or other third-party provider, and the tuition is not paid within the required time, the student is responsible for the tuition payment. As stated above, continued enrollment is dependent upon proper settlement of the debt. If not paid, the student may be withdrawn from his/her courses. For students who are withdrawn, the debt to the College is not forgiven.

In addition, the College reserves the right to pursue payment through debt collection services and other lawful means. Debtors are subject to late fees and collection costs.

### **Financial Aid Information**

NOVA strives to assure that no one be denied the opportunity to attend the College for financial reasons. Financial aid programs provide a variety of funds to assist students in paying for college.

Financial aid representatives at each campus and the College Financial Aid Office provide information about financial aid programs, application procedures, and eligibility requirements. Applications, forms, and information are posted on the office's website at

[www.nvcc.edu/financialaid](http://www.nvcc.edu/financialaid). The College updates the *Student Services Financial Aid Handbook* annually. This publication provides detailed information on application procedures and program eligibility criteria. The handbook can also be found online at [www.nvcc.edu/financialaid/\\_docs/FA-handbook.pdf](http://www.nvcc.edu/financialaid/_docs/FA-handbook.pdf).

Applications for need-based financial aid begin with filing the Free Application for Federal Student Aid (FAFSA). FAFSA on the Web Worksheets are available from Campus Financial Aid Offices or at [www.fafsa.gov](http://www.fafsa.gov). FAFSAs for the following fall can be completed starting October 1 each year, three months earlier than in the past. Applications should be completed several months in advance of the semester for which assistance is needed. Applicants for all aid programs, including loans and work study, must file the FAFSA. Completed applications received by May 1 for Fall, October 1 for Spring, and April 1 for Summer will receive priority consideration.

Additional information on scholarships, grants, loans, and on-campus employment, as well as information about financial aid policies pertaining to class attendance, recalculation of awards, satisfactory academic progress, and repayment of funds, can be found in the *Student Services Financial Aid Handbook* and at [www.nvcc.edu/financialaid](http://www.nvcc.edu/financialaid).

### **NOVA Financial Aid Satisfactory Progress Standards**

Federal regulations require that a student receiving federal financial aid make satisfactory academic progress (SAP) in accordance with the standards set by NOVA and the federal government. These limitations include all terms of enrollment, whether or not aid was awarded or received. At NOVA, satisfactory academic progress standards apply also to nonfederal aid, including state funds, institutional funds, and foundation scholarships. Progress is measured throughout the academic program by the student's cumulative grade point average (Qualitative) and by credits earned as a percentage of those attempted (Quantitative or Pace of Completion). In addition, students must complete their programs of study before attempting 150 percent of the credits required to complete the program.

The College Financial Aid Office will evaluate satisfactory academic progress before aid is awarded and again after most grades are posted for every term, starting with the first term of enrollment. Some career studies certificate programs are ineligible for student financial aid, but those credits will be counted toward all SAP requirements (GPA, Completion Rate, Maximum Timeframe, and Developmental Maximum) if the student later enrolls in an eligible program.

## **Financial Aid Status**

### **Financial Aid Good Standing (GS)**

Students who are meeting all aspects of the satisfactory academic progress policy or successfully following a designated academic progress plan are in good standing.

### **Financial Aid Warning Status (WS)**

Students who fail to meet satisfactory academic progress for the first time (excluding students who have already attempted 150 percent of the credits required for their programs of study or those flagged by the Department of Education for having unusual enrollment history) will be automatically placed in a warning status for one term and are expected to meet SAP requirements by the end of that term. Students who fail to meet SAP requirements at the end of the warning status term will be placed on financial aid suspension. However, with a successful SAP appeal, those students will be placed on financial aid probation and will retain financial aid eligibility. Students who attempt at least half-time status and fail or withdraw from all classes can immediately be placed in financial aid suspension status.

### **Financial Aid Probation Status (PS)**

Students who have successfully appealed financial aid suspension are placed in probation status (PS). Students in probation status are eligible to receive financial aid for one semester, after which they MUST be in good standing (GS) or meeting the requirements of an academic progress plan that was preapproved by the College Financial Aid Office. (See "Financial Aid Appeals" for additional information.)

### **Financial Aid Suspension Status (SS)**

Students who do not meet the credit progression schedule and/or the cumulative grade point average standard, who fail to meet the requirements of their preapproved academic progress plan, or who are flagged by the Department of Education for having unusual enrollment history with no recent academic success at NOVA will be placed in suspension status (SS). Students in suspension status are not eligible to receive financial aid unless an appeal or academic plan are submitted and approved.

### **Academic Suspension (AS)**

Academic requirements for avoiding warning status and staying in school differ from financial aid requirements for satisfactory academic progress. Academic status will be noted on registration records; financial aid status will be noted on financial aid screens in the Student Information System (NOVAConnect). Any student suspended from NOVA for academic or behavioral reasons is automatically ineligible for financial aid.



## Evaluating Progress

### Quantitative Standards or Pace of Completion

**Completion Rate (67 Percent Rule):** Students must, at a minimum, receive satisfactory grades in 67 percent of cumulative credits attempted. This calculation is performed by dividing the cumulative total number of successfully completed credits by the cumulative total number of credits attempted. All credits attempted at NOVA are included (except audits, which must be entered as such by the class census date). All credits accepted in transfer count as both attempted and successfully completed credits. This evaluation will be made prior to aid being awarded and after grades are posted at the end of each semester a student is enrolled at the College. Satisfactory grades at the College consist of “A,” “B,” “C,” “D,” “P,” or “S.”  
**NOTE:** Federal student loan borrowers must meet satisfactory academic progress requirements at the point of loan certification and again prior to the disbursement of any loan proceeds.

**Maximum Hours (150 Percent Rule):** In order to continue receiving financial aid, a student must complete his/her program of study before attempting 150 percent of the credits required for that program. Developmental and ESL coursework are excluded in this calculation. Attempted credits from all enrollment periods at the College plus all applicable transfer credits are counted; whether or not the student received financial aid for those terms is of no consequence.

**Transfer Students:** In order to properly calculate satisfactory academic progress, transfer students who apply for financial aid must request official transcripts from all other colleges attended. Official transcripts must be submitted directly to one of the campus Student Services Centers for evaluation. The student must also complete NOVA’s Request for Evaluation of Transcript Form (125–049). Credits officially accepted in transfer will be counted in determining the maximum number of allowable semester credit hours for financial aid eligibility. The College has the option to put an individual transfer student directly in financial aid warning status (WS) or suspension status (SS) immediately upon evaluation for financial aid if a pattern of unsuccessful academic work at previous colleges is indicated.

**Second Degree Students:** Credits earned from a first degree or certificate must be counted if the student changes programs or attempts a second degree or certificate. Depending on the circumstances, an appeal might be warranted.

**ESL and Developmental Studies:** Students may receive financial aid for a maximum of 30 semester hours of developmental studies courses as long as the courses are required as a result of placement testing, the student is in an eligible program of study, and SAP requirements continue to be met. ESL credits are unlimited in number as long as they are taken as part of an eligible program and SAP requirements continue to be met.

### Additional Considerations for Quantitative or Pace of Completion Standards:

- Withdrawal (“W”) grades that are recorded on the student’s permanent academic transcript will be included as credits attempted and will have an adverse effect on the student’s ability to meet the requirements of the completion rate for financial aid.
- Incomplete (“I”) grades: Courses that are assigned an Incomplete are included in cumulative credits attempted. These cannot be used as credits earned in the progress standard until a successful grade is assigned.
- Repeated courses enable the student to achieve a higher cumulative grade point average. Students can repeat courses with financial aid until successfully completed, but repeating courses adversely affects the student’s ability to meet completion rate requirements. Financial aid can be considered for successfully completed classes that are repeated to achieve a higher grade but for only one additional attempt. Only the latest attempt will count toward the cumulative grade point average.

### Qualitative Standards

**Cumulative GPA Requirements (GPA Rule):** In order to remain eligible for financial aid consideration, students must meet minimum cumulative grade point average requirements based on a progressive scale. Only nonremedial courses with grades of “A,” “B,” “C,” “D,” and “F” are included in this calculation. Transfer credits are excluded from GPA evaluation. In order to graduate, a minimum cumulative grade point average of 2.0 is required.

Total Number of Credits Attempted	GPA Requirement
1–15	1.50
16–30	1.75
31 or more	2.00

### Regaining Eligibility for Financial Aid

Students who do not meet the credit progression requirements (Quantitative or Pace of Completion) and/or cumulative grade point average requirements (Qualitative) will be immediately ineligible for financial

aid. Removal from financial aid does not prevent students from enrolling without financial aid if they are otherwise eligible to continue their enrollment.

Unless extenuating circumstances exist and an appeal is granted (see “Financial Aid Appeals”), a student in financial aid suspension should expect to continue classes at his or her own expense until satisfactory academic progress requirements are again met.

Students who fail to meet these satisfactory academic progress standards and who choose to enroll without benefit of student financial aid may request a review of their academic records after any term in which they are enrolled without the receipt of financial aid to determine whether they have again met satisfactory academic progress standards. If standards are met, eligibility is regained for subsequent terms of enrollment in the academic year. Students should consult their campus financial aid advisors for assistance in appealing any element of this policy or to determine how to regain eligibility for financial aid.

### **Financial Aid Appeals**

Under certain circumstances, students who fail to meet SAP standards and lose eligibility for financial aid can appeal the financial aid suspension. Students must clearly state what caused the suspension and must also clearly indicate what has changed that will now allow the student to succeed. Appeals are encouraged in the following cases:

- The student has experienced extenuating circumstances (for example, the student’s serious illness or accident; death, accident, or serious illness in the immediate family; other mitigating circumstances).
- The student has successfully completed one degree and is attempting another.
- The student on suspension for other than Maximum Hours (150 percent), who has not yet met SAP requirements, has during suspension enrolled in and successfully completed at least 12 semester credits at the College with a minimum GPA of 2.0.

Students appealing a suspension must do the following:

1. Complete the Satisfactory Academic Progress (SAP) Appeal Form (125–323).
2. Attach documentation in support of the appeal, including an academic plan or an advisor statement showing remaining credits to graduation for 150 percent appeals.
3. Submit all items to the College Financial Aid Office: Northern Virginia Community College, CFAO, Annandale, VA 22003–3796.

Only complete appeal submissions, with documentation, will be evaluated by the Financial Aid Office. The decision is final. Depending on the circumstances, the student could be required to complete additional requirements (for example, see a career counselor or another type of counselor, meet with an advisor to develop an academic progress plan for completion, limit enrollment, etc.) before an appeal is granted. The goal is to help the student get back on track for graduation. The reasonableness of the student’s ability for improvement to again meet SAP standards and complete the student’s program of study will be carefully considered. Appeals will be approved or denied. Students who have appeals approved will be in probationary status for the coming term. During probationary status, all attempted credits must be successfully completed with at least “C” or “S” grades, and any additional requirements of probation must be met, or the student will return to suspension. If an academic progress plan has been preapproved by financial aid, continuing to meet the requirements of that plan will put the student back into good standing.

### **Scholarships**

Private citizens, businesses, nonprofit institutions, and associations have generously donated scholarship funds for students; recipients are selected by the Student Financial Aid Committee, the donor, or a campus committee. Most scholarships require that students provide a statement of financial need by completing the Free Application for Federal Student Aid (FAFSA); some scholarships are field or career related and do not stipulate financial need as a requirement. Campus Financial Aid Offices and the financial aid website provide information about the current availability of individual scholarships as well as application materials. The NVCC Educational Foundation publishes a list of available scholarships with their general criteria and deadlines. Scholarship information and the online application can be found on the College website by searching “Scholarships.”

# STUDENT SERVICES

Each campus provides a number of services designed to help with a student's education, career, and personal development.

The NOVA *Student Handbook* provides additional information about the College, including student activities and organizations and the statement of student rights and responsibilities. Copies of the *Student Handbook* may be accessed online at [www.nvcc.edu/students/handbook](http://www.nvcc.edu/students/handbook).

The dean of students on each campus is responsible for most of the student services. Contact the dean or members of the Student Services staff to take full advantage of these opportunities for assistance.

## Student Rights and Responsibilities

There are certain rights that each College student body member may expect to enjoy as well as obligations that each student accepts by his or her enrollment. The current edition of the *Student Handbook* contains a statement on student rights and responsibilities and the College's policies on academic dishonesty, illegal substances, and student conduct and discipline.

## Counseling and Advising Services

### Academic Advising

Academic advising is a comprehensive program facilitated by counselors, advisors, teaching faculty and student services personnel who share responsibility with advisees for student success. The advising relationship is a continuous developmental process involving open communication in an atmosphere of mutual respect and honesty. It assists students with the transition to college and the evaluation and attainment of their academic, career, and personal goals. By their participation in a range of advising activities, including individual and group advising sessions, classes, and workshops, students gain an understanding of campus and College resources and develop the skills to make informed, independent decisions.

All first-time-to-college students ages 17–24 are required to take placement tests, attend orientation and meet with their advisor before registration. Other new students should also work with a counselor or academic advisor to select a program to meet their educational objectives. Once the student has chosen a major, he/she will then be referred to a faculty advisor or counselor who will assist in planning the rest of the student's program for all subsequent terms.

Students should meet with their advisor to discuss progress toward graduation near the midpoint of their program. All students are encouraged to seek information and assistance from academic advisors in career planning in addition to curriculum planning. Even students not enrolled in a specific curricular major may seek assistance from academic advisors and counselors to help select courses during enrollment.

### GPS for Success

GPS for Success is a comprehensive advising experience specifically for recent high school graduates who have never been to college. The program aims to help students foster connections with professional advisors and faculty, while teaching students how to plan and evaluate their academic performance.

### Pathway to the Baccalaureate

Pathway to the Baccalaureate is a joint effort of Northern Virginia's K-12 school systems, NOVA and George Mason University. The program provides early and ongoing support for selected students with barriers to college access and success, beginning in high school through completion of a bachelor's degree.

Admission to the program is selective and open to current high school seniors at participating high schools in Alexandria City, Arlington County, Fairfax County, Falls Church City, Loudoun County, Manassas City, Manassas Park City and Prince William County Public Schools. Visit [www.nvcc.edu/pathway](http://www.nvcc.edu/pathway) to learn more.

### Academic Planning

Students should use the online Advisement Report to monitor their progress toward their degree or certificate by logging onto NOVACConnect. From the My NOVA tab on the College's home page, students can enter the VCCS SIS: Student Information System and click on "Self Service." After clicking on the "Student Center," the "My Academics" selection offers students a menu option to view their "Advisement Report."

### Virtual Advising

Virtual advising is offered through live chat and rapid response e-mail. Students can log on during specified hours and chat with an advisor. In addition, e-mail sent to [AcademicAdvising@nvcc.edu](mailto:AcademicAdvising@nvcc.edu) will be answered within 24 hours. Virtual advisors can help current and prospective students declare or change their major, review their degree progress, register for classes, prepare for graduation, determine their eligibility for

individual courses or programs, and a host of other activities. For more information, visit [www.nvcc.edu/virtualadvising](http://www.nvcc.edu/virtualadvising).

### **Counseling Services**

Counselors, located in the Student Services Center, are professionals who are available to assist students in their educational, career, and life planning. They can help students to make effective decisions and to deal with problems they may be facing while in attendance at the College. Interviews with counselors are confidential. Referral information is available for persons requiring professional assistance beyond the scope and training of the counselors.

A counselor can help students explore and develop career goals and plan their education to help meet those goals. Students who want to enroll in a degree or certificate curriculum and did not indicate a choice of curriculum on their Application for Admission should meet with an advisor to select a major. This may mean planning a developmental program to gain the necessary skills in certain areas to meet the entrance requirements for a curriculum. It may mean planning a program to take the right courses for transfer to a four-year college or university when the student leaves NOVA. It may mean selecting the career/technical program best suited to one's career goals. The counseling service on each campus

provides a testing program to help students better understand their abilities, interests, skills, and values. Tests and inventories are administered and interpreted at a nominal charge to students.

During a student's first semester at NOVA, the counselor may refer him or her to a faculty advisor who will assist in planning the student's second semester and the rest of his or her program.

Counseling services are open to students throughout their enrollment at the College.

Counselors assist with such information as transfer, self-assessment inventories, career opportunities, volunteer service placement and job counseling. Special group programs are also available in career planning, personal exploration and other skill-building topics.

Students requiring accommodations or special services should see the "Disability Services" section of the website for more information.

### **Career Development Services**

#### **Career Planning Services**

A variety of career planning information is available online at [www.nvcc.edu/careers/](http://www.nvcc.edu/careers/). A self-assessment tool, Focus II, is available to all students, and





counselors are available to discuss the results with students. Information on entrance requirements, working conditions and compensation for thousands of careers is also available on the website under, "I am a Student and I Would Like To..." College transfer information is available online at [www.nvcc.edu/transfer/](http://www.nvcc.edu/transfer/), including Guaranteed Admission Agreements.

### **Employment Resources**

Area employers cooperate with the College to provide part-time and full-time employment for students. The College Central Network is an online listing for students and local employers and is available at [www.nvcc.edu/careers/employment.html](http://www.nvcc.edu/careers/employment.html). This site also includes additional online job search engines and resources with information on public and private sector employment.

### **NOVA Online Students**

NOVA Online provides a variety of student services to NOVA Online students, including counseling, financial aid, student success coaching, transfer advising, career services, disability services, library services, online tutoring, New Student Orientation, registration support, and student life opportunities. NOVA Online students may also use services provided at any of the NOVA campuses and centers.

### **Student Orientation**

New Student Orientation sessions are offered at each campus throughout the year. New Student Orientation provides academic advising, course registration, and an introduction to NOVA's tradition and culture for recent high school graduates and first-semester NOVA students under the age of 25 years old. Each campus also conducts orientation sessions for new adult students..

Students and parents learn about degree and certificate programs and how to utilize NOVA resources, including financial aid, transfer counseling, tutoring, and counseling services. Students will also learn how to choose and register for classes online. Campus tours and a College resource fair are also conducted on the campuses.

Students can register for a Student Orientation session online at [www.nvcc.edu/orientation](http://www.nvcc.edu/orientation).

Students taking their first online course at NOVA should also complete a NOVA Online orientation, offered via webinar on multiple dates and times around the start of each semester. Check the NOVA Online website or contact the NOVA Online Hotline at [elicoursespecialists@nvcc.edu](mailto:elicoursespecialists@nvcc.edu) or 703-323-3347 for registration information.

### **Student Life**

To encourage students to make the most of their educational experience at NOVA, the College offers diverse educational, cultural, and social activities and programs. These unique opportunities are offered to complement and enhance the student's learning process both in and out of the classroom environment. Student activities include student government, student publications, intercollegiate and intramural sports, performing arts, political organizations, professional and community service organizations, cultural and religious organizations, and many other interest groups. Students interested in getting involved should contact the Office of Student Life on each campus and NOVA Online.

### **Disability Services**

NOVA is committed to serving persons with documented disabilities. A goal of NOVA is that each qualified student has an equal opportunity to pursue a college education regardless of the presence or absence of a disability. To reach that goal, NOVA will make reasonable accommodations in courses, programs, and facilities for students with documented disabilities. Students who require any special accommodation or service should contact the NOVA counselor for Disability Support Services at the campus of their choice at least four weeks prior to the beginning of classes. To qualify for accommodations, students must provide clear and specific evidence of a documented disability by a qualified professional. In general, the documentation should be no more than three years old or must be based on adult norms.

All information obtained in the diagnostic and medical reports will be maintained and used in accordance with applicable confidentiality requirements. College policy reclassifies any student not enrolled for three full years as inactive. Disability documentation records of inactive students will not be maintained.

Otherwise qualified students with documented disabilities who are, by reason of their disability, unable to complete a requirement of the program pursued by the student, with or without reasonable accommodations, may request an approved course substitution. Substitutions will generally not be granted for any course that is deemed essential to the program of instruction being pursued by such student, or to any directly related licensing requirement. If requirements are waived, students must successfully complete other courses to compensate for the credit hours.

Questions of compliance with Section 504 of the Rehabilitation Act or the Americans with Disabilities



Act should be addressed to the director of Equity and Diversity.

Handicapped parking spaces are available at each campus. A handicapped permit issued by the Department of Motor Vehicles is required. The College does not issue handicapped parking permits.

Each campus has identified one or more counselors to assist students in the determination of eligibility for accommodations and in academic counseling. NOVA assumes that a student with a disability will assist the College in identifying needed resources and possible agency sources. NOVA has a liaison with the Virginia Department of Rehabilitative Services and the Virginia Department for the Blind and Visually Impaired.

Additional information may be obtained on each campus or by visiting the website [www.nvcc.edu/disability-services](http://www.nvcc.edu/disability-services).

### **Military Services Office**

NOVA's Office of Military Services helps all members of the military community—active duty, veterans, and family members—achieve their education and career goals. Military members can receive assistance with navigating the admissions process, troubleshooting payment issues, understanding Tuition Assistance (TA) and VA benefits, and provide connections with College representatives and community resources.

### **Veterans Affairs Office**

The College veterans advisor coordinates all veterans educational benefits from the federal Department of Veterans Affairs for the College. Information, counseling, and certification of enrollment for veterans are available from each campus veterans advisor. See also the "Admission" and "Financial Information" sections of this Catalog for further information relative to veterans.

### **Safety Information**

The College has a professionally trained police force on each campus. These officers provide protection for the campus community. The College publishes the *Annual Security Report*, which can be found on the Police section of NOVA's website. The document details the College's safety programs, crime statistics, and crime prevention. Furthermore, it includes the College's policies and procedures to address alcohol and drug use, the reporting of crimes, sexual assault, and other matters.

Copies of the *Annual Security Report* are available from the campus Police Offices and Student Services Centers. It can also be found on the College web page at [www.nvcc.edu/police/college-safety](http://www.nvcc.edu/police/college-safety).

### **Sexual Harassment**

Sexual harassment of any member of the College community is serious misconduct and shall not be tolerated. The College has developed policies and procedures addressing sexual harassment and reporting of such complaints. The policies and procedures are available in the *Student Handbook*, which is located on the College website.

### **Substance Abuse**

In accordance with the Drug-Free Schools and Communities Act of 1989, NOVA supports efforts to eliminate drug and alcohol abuse through a series of programs and services designed to prevent use of substances that are illegal and harmful, and to assist individuals who suffer from substance abuse. The use of drugs and the abuse of alcohol can endanger one's health and future. Students who need help can contact Counseling Services at any campus for information about referral to community agencies.

No one may possess, sell, use, manufacture, give away, or otherwise distribute illegal substances while on campus or at College-sponsored events or meetings off-campus. Students who violate this policy will be subject to College discipline imposed through established due process procedures. The College will notify its Police and any other appropriate law enforcement agencies when its rules regarding illegal substances are broken, and cooperate fully in any investigation and prosecution.

### **Technology Support and Guidelines**

NOVA students will have access to and use of information technology applications, services, and resources as part of their enrollment. Enrolled students are provided with a LAN (Local Area Network) account to access campus computer workstations, and an official VCCS account (NOVA Student ID) to access their student e-mail account, the Student Information System (NOVAConnect), and Blackboard courses. NOVAConnect allows students to enroll and pay for courses online.

Students are responsible for checking their e-mail often for College announcements on student services or messages from instructors and classmates. In order to insure student privacy, the College will use a student's official College e-mail address.



The Virginia Community College System has established a student ethics agreement for the use of College computer information technology. Student use of this technology is limited to his or her role as a student at the College, and there are certain security procedures that all students are expected to observe. The Information Technology Student/Patron Ethics Agreement is available in the *Student Handbook* and posted in computer laboratories, libraries, and other areas where access to College computer services is available. Students may view this agreement at [www.nvcc.edu/policies](http://www.nvcc.edu/policies).

### **Voter Registration**

Northern Virginia Community College encourages all eligible students to register to vote. Campus libraries and Student Services Centers can provide students with voter registration information, or students may register at <http://vote.elections.virginia.gov>.

### **Student Consumer Information**

The College is obligated under the 1998 Amendments to the Higher Education Act of 1965 to disclose annually where the following student consumer information may be found.

Consumer Information	Where Available
<ul style="list-style-type: none"> <li>• Procedures for inspecting and reviewing of student's education records</li> <li>• Procedures for amending student records</li> <li>• Procedures for disclosing student's educational records</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Catalog</i>: <a href="http://www.nvcc.edu/curcatalog">www.nvcc.edu/curcatalog</a></li> <li>• <i>Student Handbook</i>: <a href="http://www.nvcc.edu/students/handbook">www.nvcc.edu/students/handbook</a></li> </ul>
<ul style="list-style-type: none"> <li>• Procedures for filing a complaint to the U.S. Department of Education</li> </ul>	<ul style="list-style-type: none"> <li>• See U.S. Dept. of Education, Office for Civil Rights website at <a href="http://www2.ed.gov/about/offices/list/ocr/docs/howto.html">www2.ed.gov/about/offices/list/ocr/docs/howto.html</a> and Office of Inspector General website at <a href="http://www2.ed.gov/about/offices/list/oig/hotline.html">www2.ed.gov/about/offices/list/oig/hotline.html</a></li> </ul>
<ul style="list-style-type: none"> <li>• A list of all available federal, state, local, private, and institutional financial need-based and non-need-based assistance programs</li> <li>• The application procedures, eligibility criteria, method and frequency of disbursements, terms of loans, general conditions, and exit counseling information for these assistance programs</li> </ul>	<ul style="list-style-type: none"> <li>• Financial aid website: <a href="http://www.nvcc.edu/financialaid">www.nvcc.edu/financialaid</a></li> </ul>
<ul style="list-style-type: none"> <li>• Cost of attending College (tuition and fees posted online only)</li> <li>• Refund policy</li> <li>• Grant or loan return or repayment procedures for withdrawn students</li> <li>• Requirements for officially withdrawing from the College</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Catalog</i>: <a href="http://www.nvcc.edu/curcatalog">www.nvcc.edu/curcatalog</a></li> <li>• <i>Student Handbook</i>: <a href="http://www.nvcc.edu/students/handbook">www.nvcc.edu/students/handbook</a></li> <li>• Financial aid website: <a href="http://www.nvcc.edu/financialaid">www.nvcc.edu/financialaid</a></li> </ul>
<ul style="list-style-type: none"> <li>• Academic programs information</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Catalog</i>: <a href="http://www.nvcc.edu/curcatalog/academics/programs">www.nvcc.edu/curcatalog/academics/programs</a></li> <li>• <i>Schedule of Classes</i>: <a href="http://www.nvcc.edu/curschedule">www.nvcc.edu/curschedule</a></li> </ul>
<ul style="list-style-type: none"> <li>• Organizations that accredit, license, or approve the College and its programs. Procedures for reviewing schools' accreditation, licensing, or approval documentation</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Catalog</i>: <a href="http://www.nvcc.edu/curcatalog">www.nvcc.edu/curcatalog</a></li> </ul>
<ul style="list-style-type: none"> <li>• Description of any special services and facilities for disabled students</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Catalog</i>: <a href="http://www.nvcc.edu/curcatalog">www.nvcc.edu/curcatalog</a></li> <li>• <i>Student Handbook</i>: <a href="http://www.nvcc.edu/students/handbook">www.nvcc.edu/students/handbook</a></li> </ul>
<ul style="list-style-type: none"> <li>• Title and availability of NOVA staff responsible for dissemination of institutional and financial assistance disclosure information and how to contact them</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Catalog</i>: <a href="http://www.nvcc.edu/curcatalog">www.nvcc.edu/curcatalog</a></li> <li>• <i>Student Handbook</i>: <a href="http://www.nvcc.edu/students/handbook">www.nvcc.edu/students/handbook</a></li> <li>• Financial aid: <a href="http://www.nvcc.edu/financialaid">www.nvcc.edu/financialaid</a></li> </ul>
<ul style="list-style-type: none"> <li>• Statement that enrollment in a study abroad program approved for credit may be considered enrollment at NOVA for the purpose of applying for Title IV assistance</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Catalog</i>: <a href="http://www.nvcc.edu/curcatalog">www.nvcc.edu/curcatalog</a></li> <li>• If a NOVA credit course offers special studies abroad, it is treated as a regular credit course.</li> </ul>
<ul style="list-style-type: none"> <li>• Completion or graduation rate for NOVA certificate- or degree-seeking, full-time students who graduated or completed their program within 150% of the normal time for graduation or completion</li> <li>• Transfer-out rate for above described students</li> </ul>	<ul style="list-style-type: none"> <li>• Office of Institutional Research and Analysis (OIR) Reports: <a href="http://www.nvcc.edu/oir/graduate.html">www.nvcc.edu/oir/graduate.html</a></li> <li>• Virginia Community College System (VCCS) Institutional Research Information: <a href="http://www.vccs.edu/Research">www.vccs.edu/Research</a></li> </ul>
<ul style="list-style-type: none"> <li>• Campus security report. The <i>Annual Security Report</i> includes statistics concerning crimes on College property. The report includes institutional policies on campus security, alcohol and drug use, crime prevention, the reporting of crimes, sexual assault, and other matters.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Annual Security Report</i>: <a href="http://www.nvcc.edu/police/college-safety">www.nvcc.edu/police/college-safety</a></li> </ul>



# ACADEMIC POLICIES AND INFORMATION

## Academic Integrity

When College officials award credit, degrees, and certificates, they must assume the absolute integrity of the work students have done; therefore, it is important that students maintain the highest standard of honor in their scholastic work.

The College does not tolerate academic dishonesty. Students who are not honest in their academic work will face disciplinary action along with any grade penalty the instructor imposes. Procedures for disciplinary measures and appeals are outlined at [www.nvcc.edu/students/handbook](http://www.nvcc.edu/students/handbook). In extreme cases, academic dishonesty may result in dismissal from the College. Academic dishonesty, as a general rule, involves one of the following acts:

- cheating on an examination or quiz, including giving, receiving, or soliciting information and the unauthorized use of notes or other materials during the examination or quiz;
- buying, selling, stealing, or soliciting any material purported to be the unreleased contents of a forthcoming examination, or the use of such material;
- substituting for another person during an examination or allowing another person to take the student's place;
- plagiarizing, which means taking credit for another person's work or ideas. This includes copying another person's work either word-for-word or in substance without acknowledging the source;
- accepting help from or giving help to another person to complete an assignment, unless the instructor has approved such collaboration in advance;
- knowingly furnishing false information to the College; forgery and alteration or use of College documents or instruments of identification with the intent to defraud.

## Academic Advising

Students will be assigned a faculty advisor in their program of study. Counselors also provide academic advising services through the Student Services Center. See Counseling and Advising Services under the "Student Services" section of this *Catalog* for further information.

## Attendance/Student Participation

Education is a cooperative endeavor between the student and the instructor. Instructors plan a variety of learning activities to help their students master the

course content. Students are expected to participate in these activities within the framework established in the class syllabus. Faculty will identify specific class attendance policies and other requirements of the class in the syllabus that is distributed at the beginning of each term. Successful learning requires good communication between students and instructors; therefore, in most cases, regular classroom attendance, or regular participation in the case of a nontraditional course format, is essential.

It is the student's responsibility to inform his/her instructor prior to an absence from class. Students are responsible for making up all coursework missed during an absence. In the event of unexplained absences, the instructor may withdraw a student administratively from the course.

If a student does not attend at least one class meeting or participate in an online learning class by the "last day to drop with a tuition refund" (census date), his/her class registration will be administratively deleted. This means that there will be no record of the class or any letter grade on the student's transcript. Furthermore, the student's class load will be reduced by the course credits, and this may affect his/her full-time or part-time student status. Tuition will not be refunded.

## Course Load

The normal academic course load for students is 15–17 credits per semester. The minimum full-time academic load is 12 credits, and the normal maximum full-time load is 18 credits or 19 if one is a one-credit Student Development (SDV) course. To enroll in more than 18 credits, students must have a 3.00 grade point average or higher on the last 12 credits or most recent semester of full-time enrollment completed at NOVA or another accredited college or university, and the approval of the dean of students at their primary campus. In the case of students with considerable professional experience, successful completion of college-level training may substitute for the credit hour and GPA requirement. Approval for an overload based on professional training may be granted by the dean of students in consultation with the appropriate program head/program director.

## Credits

A credit at NOVA is equivalent to one collegiate semester hour. One credit is awarded for each of the following:

- one hour per week of lecture (15 hours per semester plus an exam period)
- two hours per week of laboratory with one hour of out-of-class practice (45 hours per semester plus an exam period)
- three hours per week of laboratory with no out-of-class practice (45 hours per semester plus an exam period)

Courses offered in a nontraditional format require an equivalent amount of time.

## Grades

### Grade Reports

Grades are obtained through NOVAConnect at [www.nvcc.edu/novaconnect](http://www.nvcc.edu/novaconnect). Grade reports are not mailed.

### Grading System for Credit Classes

In order to receive any letter grade, a student must have attended a minimum of one class meeting or the equivalent in the case of an online learning course. In an online learning course, initial student attendance is determined by course participation as measured by accessing and using course materials, completion of a class assignment, participation in a course discussion, or other evidence of participation. The College will administratively drop students who enroll in a course but do not attend a minimum of one class meeting or the online learning equivalent by the census date. Existing College policies regarding tuition refund shall remain in effect.

The grades of “A,” “B,” “C,” “D,” “P,” and “S” are passing grades. Grades of “F” and “U” are failing grades. “R” and “I” are interim grades. Grades of “W” and “X” are final grades carrying no credit.

The quality of performance in any academic course is reported by a letter grade, the assignment of which is the responsibility of the instructor. These grades denote the character of study and are assigned quality points as follows:

- A = Excellent – 4 grade points per credit
- B = Good – 3 grade points per credit
- C = Average – 2 grade points per credit
- D = Poor – 1 grade point per credit
- F = Failure – 0 grade points
- I = Incomplete – No grade point credit. The incomplete (“I”) grade is used only for verifiable unavoidable reasons that a student is unable to complete a course within the normal course time. To be eligible to receive an “I” grade, the student must have satisfactorily completed more than 60 percent of the course requirements and attendance, and must request the faculty member to assign the “I” grade and indicate why it is warranted. The faculty member

has the discretion to decide whether the “I” grade will be awarded.

Since the “I” grade extends enrollment in the course, requirements for satisfactory completion will be established through consultation between the faculty member and the student and documented on the “I” Grade Assignment Form (125–076). In assigning the “I” grade, the faculty must complete documentation that

- states the reason for assigning the grade;
- specifies the work to be completed and indicates its percentage in relationship to the total work of the course;
- specifies the date by which the work must be completed; and
- identifies the default grade (“B,” “C,” “D,” “F,” “P,” “R,” or “U”) based upon coursework already completed.

Completion dates may not be set beyond the last day of the subsequent semester (to include the Summer Session) without written approval of the provost. The student will be provided a copy of the documentation. All “I” grades that have not been changed by the faculty member through the normal grade change processes will be subsequently changed to the default grade assigned by the faculty member. An “I” grade will be changed to a “W” only under documented mitigating circumstances, which must be approved by the provost.

- P = Pass – No grade point credit. Applies only to nondevelopmental courses. The “P/U” grading option may be used for an entire section of any course but not for an individual student within a course. Use of this grade must be approved by the academic dean. Grades of “P” are not included in grade point average calculations. Only seven credit hours of “P” grades may be applied toward graduation. This maximum may be extended to 15 credit hours for an approved experiential learning program such as PLACE (SDV 298).
- R = Reenroll – No grade point credit. The reenroll “R” grade may be used as a grade option in developmental and College ESL courses only, to indicate satisfactory progress toward meeting course objectives. In order to complete the course objectives, students receiving an “R” grade must reenroll in the course and pay the specified tuition. The “R” grade may be given only once per course.
- S = Satisfactory – No grade point credit. Used only for satisfactory completion of a developmental





studies course (numbered 1–9) or any College ESL course. Grades of “S” are not included in grade point average calculations.

U = Unsatisfactory – No grade point credit. Applies to nondevelopmental courses being offered with a “P/U” grading option, as well as to developmental studies, ESL courses, noncredit courses, and specialized courses and seminars at the discretion of the College. The “P/U” grading option may be used for an entire section of any course, but not for a single individual student within a course.

W = Withdrawal – No grade point credit. A grade of “W” is awarded if a student withdraws or is withdrawn from a course after the add/drop period but prior to the completion of 60 percent of the session, using the Withdrawal Initiated by Student Form (125–047) or Withdrawal Initiated by Instructor Form (125–031). After the 60 percent point, the student will receive a grade of “F” except under mitigating circumstances that must be documented on either the 125–047 or 125–031 Form. In all cases, the instructor and academic dean must approve the withdrawal, and the dean forwards the signed form to the Student Services Center. This documentation will be retained in the student’s record. See also “Withdrawal from a Course” section, under “Enrollment.”

X = Audit – Students auditing a course may attend without taking examinations or receiving credit for the course. Permission of the instructor and the academic dean is required to audit a course no later than the census date for the course.

See “Auditing a Course,” under “Enrollment,” for more information.

### Calculating the GPA

The grade point average (GPA) is determined by dividing the total number of grade points earned in courses by the total number of credits attempted. Courses that do not generate grade points are not included in credits attempted. The GPA is carried out to two digits past the decimal point (example 1.00). No rounding shall be done to arrive at the GPA.

The following table illustrates a GPA of 2.00 obtained by dividing 30 by 15.

Course	Credit Hours Attempted	Grade	Grade Points	Credit Hours Completed	Total Grade Points
BIO 101	4	C	2	4	8
ENG 111	3	B	3	3	9
MUS 141	2	A	4	2	8
PED 109	1	F	0	0	0
FRE 101	5	D	1	5	5
PSY 100	0	W	0	0	0
<b>Totals</b>	<b>15</b>		<b>10</b>		<b>30</b>

### Course Grade Appeals

Students who think that a semester grade is in error may check by contacting the appropriate instructor within 30 calendar days after the first day of classes

for the next Fall or Spring Semester. If the grade is in error, the instructor will take the necessary steps to correct it. After the next semester, the grade will stand. Students should review the Student Course Grade Appeal Form (125–053) online for guidance in the process.

### Developmental Course Grading

An “S” grade will be assigned to indicate satisfactory completion of the course objectives for each developmental course (numbered 1–9).

Students who are making satisfactory progress but have not completed all of the instructional objectives for a developmental course will be assigned an “R,” must reenroll, and must pay the appropriate tuition to complete course objectives.

Students who are not making satisfactory progress in a developmental course will be assigned a “U” (unsatisfactory). Such students should meet with a counselor for possible reevaluation of goals and for determination of any subsequent academic work.

Credits earned for developmental courses are not counted in grade point computations toward graduation or in determining sophomore status. They are used in determining full-time or part-time status.

### Repeating a Course

Students normally are limited to two enrollments in a credit course that is not designated as repeatable for credit in the VCCS Master Course File or is not identified as a general usage course. Repeatable courses are listed below under “Course Repeat Exceptions.” General usage courses are those courses numbered 90–190–290; 93–193–293; 95–195–295; 96–196–296; 97–197–297; 98–198–298; or 99–199–299.

For students who were enrolled during any semester or session beginning in Fall 1988 and repeated a course, only the last “A” through “F” grade earned, not the higher of the two grades, is counted in computing the cumulative and curriculum GPA and for satisfying curricular requirements. If the subsequent grade is a “W,” “X,” or “I,” it does not replace the grade earned previously. When a course is repeated and the grade of “F” is earned, all grades, credits attempted, credits completed, and quality points for previous enrollments in that course are no longer applicable. Grades of “W,” “X,” and “I” shall not count as first or subsequent attempts for purposes of GPA calculation. Courses exempt from the course repeat policy (see exceptions) are not affected by this policy; each grade counts.

Repeating a course does not change a student’s GPA for a given semester. A graduate’s curriculum and cumulative GPAs and Honors designations at the time of graduation will remain unchanged if the graduate repeats a course.

### Course Repeat Exceptions

Normally, students may enroll a maximum of two times in a credit course that is not a general usage course or a course designated as repeatable for credit. Exceptions to this policy will be considered on a case-by-case basis when a student submits a Course Repeat Request Form (125–013) to the academic division offering the course.

Credit courses that are designated as repeatable for credit in the VCCS Master Course File or are identified as general usage courses may be repeated for credit. Other than the general usage courses, only those courses designed to develop and maintain proficiency in the visual and performing arts, or to meet requirements for certification or recertification in allied health or applied technology fields, may be designated as repeatable for credit. Examples are applied music courses, automotive emissions inspection courses, and theatre workshops. Students will be limited to 10 credits earned through multiple enrollments in the same course.

The following courses are exempt from the two-enrollment limit:	
AUT	215, 225, 226
CST	132
EMS	115, 173, 243, 244, 245
GOL	135
MUS	136, 137, 138, 145, 148, 149, 155, 165, 166, 175, 185, 236, 237, 238, 245, 248, 249, 255, 265, 266, 275, 285
PED	160, 161, 163, 164, 166
General Usage Courses: 90, 190, 290; 93, 193, 293; 95, 195, 295; 96, 196, 296; 97, 197, 297; 98, 198, 298; and 99, 199, 299.	

### Course Prerequisites

Some courses have prerequisites or corequisites. These requirements, which were established to foster a student’s success in the course, are identified in the Course Descriptions section of this *Catalog*. Students may not enroll in a course for which they do not meet the prerequisites by the time the course begins. (The authorization for a waiver of any prerequisite may be made only by the dean of the instructional division offering the course.) Students may be administratively dropped from any course for which they have not met the prerequisite.

In a course that requires placement tests, students must obtain the required minimum scores to enroll in a course or complete prescribed developmental studies courses before enrolling in the desired course.

Although there is no test for computer competency, most courses do require students to use the computer for research, papers, and other assignments. Students who are not experienced using a computer can take introductory courses available to help increase their proficiency.

## Student Development Courses

All curricular students, except those in some career studies certificate programs, shall participate in a one-credit student development course designed to help them succeed in college, either SDV 100 College Success Skills or SDV 101 Orientation to a specific discipline. All SDV courses cover topics related to academic success, responsible decision making, and College information. Some sections address additional topics and some are intended for students in specific programs.

NOVA students must take an SDV course within their first 15 semester hours at the College, unless the requirement has been waived. SDV waivers may be granted for students who hold a transfer-oriented associate degree or bachelor's degree from a regionally accredited institution. Students still must complete the required number of credits for their degree.

## Course Substitutions for Students with Documented Disabilities

Otherwise qualified students with documented disabilities covered by the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973, as amended, who are, by reason of their disability, unable to complete a requirement of the program pursued by the student, with or without reasonable accommodations, may request an approved course substitution.

Substitutions will generally not be granted for any course that is deemed essential to the program of instruction being pursued by such student, or to any directly related licensing requirement. If requirements are waived, students must successfully complete other courses to compensate for the credit hours.

## Transferring Credit to NOVA

NOVA allows previous academic study, examination, or career experience to be evaluated for possible College credit. Only students who have declared a

major and registered for at least one credit at NOVA may request evaluation of transfer credit or credit for prior learning. Students must have completed at least one course at NOVA before an official transcript reflecting transfer credit will be issued. No more than 75 percent of a degree or certificate may be earned through transfer credit and/or credit for prior learning. Only credit applicable to a student's academic program will be transferred. Prior learning credits that are to be used to meet the specific requirements of a curriculum must be approved by the academic dean responsible for a student's curriculum.

## Credit from Other Colleges and Universities

NOVA accepts credits from other regionally accredited U.S. colleges and universities for which a student has earned a grade of "C" or better. To have such credit evaluated, students must submit an official transcript from their previous institution and a request for evaluation to the Student Services Center at any campus. An official transcript is one that has the seal of the institution or testing organization and the signature of an official of that institution or organization. An official transcript must be received in a sealed envelope from the originating institution that has no overt sign of having been opened or otherwise disturbed. Official transcripts may be mailed directly from the transferring institution to a NOVA Student Services Center or delivered in acceptable condition, such that the receiving registrar has confidence that the record received is authentic. Official transcripts that are sent to College faculty also may be accepted. Contact the Student Services Center at any campus for procedures required to initiate the evaluation of transfer credit.

Students who have earned college credit from universities outside the United States must have their credit evaluated by an international credit evaluation agency before submitting it to the College. NOVA accepts evaluations from World Education Services ([www.wes.org](http://www.wes.org)) or the American Association of College Registrars and Admissions Officers ([www.aacrao.org](http://www.aacrao.org)). Students must submit an official transcript from the evaluation agency to a campus Student Services Center and submit a request for evaluation.

## Credit for Prior Learning

NOVA also evaluates prior college-level learning from nontraditional sources. Only official transcripts or other documentation specified in the *Credit for Prior Learning Manual* will be evaluated. Consult NOVA's *Credit for Prior Learning Manual* at [www.nvcc.edu/prior-learning/cpl-manual.html](http://www.nvcc.edu/prior-learning/cpl-manual.html) for complete information and a list of credit for prior learning opportunities or contact an academic advisor or counselor.



Credit for prior learning is available to students for nontraditional educational experiences that fall into the following basic categories:

- credit for military training and courses
- credit earned in nontraditional programs, including workplace and government training programs evaluated by the American Council on Education (ACE), National College Credit Recommendation Services (NCCRS), and NOVA faculty
- credit by examination, including Abitur, Advanced Placement (AP), Assessment by Local Examination (ABLE), University of Cambridge Advanced Level Examinations, College-Level Examination Program (CLEP), DSST (formerly known as DANTES), International Baccalaureate (IB), and SAT II subject exams
- credit by PLACE (Prior Learning Activity for Credit Evaluation) portfolio development, a NOVA program for adults who have gained college-level learning through life experiences, such as work, volunteer activities, participation in civic and community assignments, travel, independent study, etc.

### Foreign Language Credit

Students who have completed two years of a single foreign language in high school or whose native language is not English have the following options:

- Request assessment by the College faculty if it is a language currently taught at NOVA. Such assessment could place the student into levels above the introductory course in the foreign language sequence. For students who are granted advanced placement, additional general electives may have to be completed to meet the minimum credit requirements for the degree.
- Take a CLEP or other approved foreign language exam. Students who achieve a satisfactory score will be awarded credit for the foreign language that may be used toward completion of a degree.
- Request a waiver of the foreign language requirement for those who are proficient in a foreign language not offered by NOVA or through examination. Proficiency is generally indicated if the student has at least the equivalent of a high school diploma from an institution where the primary language is other than English. If the foreign language requirement is waived, additional general electives must be completed to meet the minimum credit requirements for the degree. To receive the waiver, students must submit a high school transcript or other official documentation indicating that the language of instruction was not English.

### Examinations

Students are expected to take tests at regularly scheduled times. In addition, every student is required to take a final examination, receive an

appropriate evaluation instrument, or continue receiving instruction during the scheduled final examination period. Any deviation from the final examination schedule must be approved by the campus provost. Students have the right to review their final exam for one semester after the end of the term in which the final exam was taken.

### Academic and Graduation Honors

Academic excellence recognitions can be viewed online on a student's unofficial transcript through NOVACConnect at [www.nvcc.edu/novaconnect](http://www.nvcc.edu/novaconnect).

The College provides the following recognitions for academic excellence:

#### Presidential Scholars

A student's name will be placed on the Presidential Scholars list for any semester that his/her grade point average is 3.75 to 4.00. The student must have completed at least nine semester hours in the current semester (excluding developmental courses) and have earned a minimum of 20 semester hours of credit at NOVA.

#### Dean's List

A student's name will be placed on the Dean's List for any semester that his/her grade point average is 3.50 to 3.74. The student must have completed at least six semester hours in the current semester (excluding developmental courses) with no grade lower than "C."

#### Graduation Honors

Students attending NOVA for a minimum of 30 credit hours in degree programs are eligible for graduation honors. Those attending NOVA for a minimum of 50 percent of the credit hours in their certificate program are eligible for graduation honors. Students must apply online for graduation to be eligible for graduation honors. Graduation honors are determined by the student's cumulative grade point average at the completion of the semester for which he/she is certified for graduation.

Appropriate honors are based on scholastic achievements and recorded on the degree or certificate as follows:

Cumulative Grade Point Average	Honor
3.20	Cum Laude (with honor)
3.50	Magna Cum Laude (with high honor)
3.80	Summa Cum Laude (with highest honor)





## Graduation

### Graduation Application

Students can apply for graduation online at the beginning of the semester they intend to graduate. Visit [www.nvcc.edu/graduation](http://www.nvcc.edu/graduation) and click on Application for Graduation. Students must observe the application deadline dates: October 1 for Fall graduation, March 1 for Spring graduation, and June 1 for Summer graduation. Applications received after these dates will be processed for the following semester.

### Associate Degree and Certificate Requirements

To be eligible for graduation with an associate degree (A.A., A.S., A.F.A., A.A.A., or A.A.S.), certificate, or career studies certificate from the College, students must have

- been admitted to a curriculum (declared a major);
- completed all curricular requirements as outlined in the College *Catalog* including receiving a passing grade in all of the coursework and fulfilling the credit hour requirements. The *Catalog* to be used to determine graduation requirements is the one in effect at the time of the student's admission to a curriculum from which the student is graduating, or any subsequent *Catalog* of the student's choice from an academic year in which he/she attended NOVA. The *Catalog* to be used in certifying the student's graduation shall have been in effect no more than seven years prior to the semester of graduation;
- taken at least 25 percent of the credit required in the curriculum at NOVA;
- earned a grade point average of at least 2.00 in courses attempted that are applicable toward graduation in the curriculum;
- applied for graduation online on or before the published dates (no application is necessary for the General Education Certificate);
- resolved all financial obligations to the College and returned all materials, including library books; and
- certificate and career studies certificate

candidates enrolled in a program of more than 15 credits must also complete a Student Development (SDV) course even if none is required for a specific curriculum.

### Multiple Degrees

Students who wish to earn a degree, diploma, certificate, or career studies certificate in addition to any other degree, diploma, certificate, or career studies certificate must complete all requirements of both programs, and the awards must differ in content from one another by at least 25 percent of the credits.

### Certification of Completion

Program administrators may award a certificate of completion for successful completion of a cohesive set of courses for which no standard award (degree, certificate, or career studies certificate) is given. Certificates of completion may be given for completion of credit or noncredit courses. These awards are conferred by program administrators, not by the College, so recipients are not considered College graduates and are not eligible to participate in Commencement. Certificates of completion are not recorded on the student's official transcript.

### Posthumous Degrees

Upon request, posthumous degrees may be awarded to students who are in their last semester of study and/or within 15 credits of degree completion at the time of death. The degree award must be approved by the executive vice president for Academic and Student Services. The diploma will bear the notation "Awarded Posthumously."

### Issuing of Diplomas

Diplomas are issued at the end of each term after final verification of grades and completion of requirements. Diplomas will be mailed to the address the student entered in his/her online graduation application. Students will receive only one diploma for each degree or certificate earned. For students who complete additional coursework after

the awarding of a degree, the cumulative and plan grade point averages (GPAs) will be affected, but not the GPAs entered when the degree was awarded. The updated grades and GPAs will be reflected on the student's transcript but will not have any bearing on the diploma.

The College will reissue diplomas in cases of natural disaster (such as fire or tornado), printing error, or name changes resulting from gender reassignment.

### **Participation in the Commencement Ceremony**

Students are eligible to participate in the Commencement ceremony if they completed their program requirements during or prior to the current academic year. For the Spring 2017 Commencement this means students who complete program requirements in Spring 2017 or any prior semester may participate. Spring Semester graduation applicants who participate in the Commencement ceremony are not guaranteed the awarding of a degree. Graduation applicants still must successfully complete their program requirements to graduate from NOVA.

Students who have completed only the General Education Certificate are not eligible to participate in the Commencement ceremony.

### **Transcripts**

The official NOVA transcript of a student's academic record can be requested by searching Transcript Request and ordering it through Parchment eTranscript Service for a fee. Transcripts will be sent electronically within 24-48 hours, or students can request a paper copy for an additional fee. Financial aid transcripts are available at no cost through the College Financial Aid Office. Students may print their own unofficial transcript through MyNOVA.

### **Transfer from NOVA**

Since admission policies and program requirements vary among four-year colleges, all students need to be acquainted with the specific requirements of the college or university of their choice. Students should consult and work closely with counselors and/or academic advisors in transfer planning and for designing an appropriate NOVA program of study.

NOVA offers transfer programs that lead to the associate of arts (A.A.) degree or the associate of science (A.S.) degree. These programs are designed for students who plan to complete the freshman and sophomore years of college work at the community

college and then transfer to a four-year college or university to complete the junior and senior years of a bachelor's degree. Some four-year colleges will accept certain associate of applied science (A.A.S.) and associate of applied arts (A.A.A.) programs, but each institution has a different policy.

The College transfer website, [www.nvcc.edu/transfer](http://www.nvcc.edu/transfer), is a good first stop in planning one's transfer from NOVA to a four-year institution. Guaranteed admission and articulation agreements, four-year school transfer guides and admission information, campus transfer events, and more, are all linked on this site. After viewing the site, a follow-up visit with a campus transfer counselor is recommended.

Only courses with a grade of "C" or better are accepted for transfer even if the student has an A.A. or A.S. degree. Students must submit a completed transcript request form online through NOVAConnect or to a NOVA Student Services Center to have an official copy of their transcript forwarded to the intended transfer college or university.

The State Council of Higher Education for Virginia (SCHEV) and the State Board for Community Colleges have endorsed a State Policy on Transfer. This policy gives guidelines for Virginia community colleges and state-supported senior institutions on admission of transfer students, acceptance and application of transfer credits, services for and responsibilities of transfer students, and guidelines for students who transfer without an A.A. or an A.S. degree.

### **Guaranteed Admission and Transfer Articulation Agreements**

NOVA has formal guaranteed admission and transfer articulation agreements with many institutions. These agreements detail the terms of transfer for NOVA students completing associate degree programs. They define the way courses, programs, or entire categories of programs transfer to another institution and may include admission guarantees. Counselors can provide students with more specific information on how these agreements relate to individual transfer plans. For a current list of agreements, visit the transfer services website at [www.nvcc.edu/transfer](http://www.nvcc.edu/transfer).

### **Academic Standing**

Students are considered in good academic standing if they maintain a semester minimum GPA of 2.00, are eligible to reenroll at the College, and are not on academic suspension or dismissal status.

Students who are on academic warning or academic probation but are eligible to reenroll may be

considered eligible to receive financial aid assistance or other benefits requiring a “good academic standing” status.

Students who are having academic difficulty will have one of the following official indications appear in their grade report on NOVACConnect:

### **Academic Warning**

Students who fail to maintain a minimum grade point average of 2.00 for any semester will receive an academic warning. Students on academic warning are encouraged to consult with their advisor/counselor and take advantage of academic support services provided by the College.

### **Academic Probation**

Students who fail to maintain a minimum cumulative grade point average of 1.50 will be placed on academic probation until their grade point average reaches 1.75 or better. The statement “Academic Probation” will be included on the student’s permanent record. Students on probation are ineligible for appointive or elective office in student organizations unless special permission is granted by the dean of students or another appropriate College administrator. Students on academic probation may be required to carry less than a normal load the following semester and are required to consult with their advisor/counselor. Students shall be placed on probation only after they have attempted 12 semester credits.

### **Academic Suspension**

Students who are on academic probation and fail to attain a semester GPA of 1.50 or better shall be placed on suspension only after they have attempted 24 semester credits. Academic suspension will be for one semester. The statement “Academic Suspension” will be placed on the student’s permanent record. Students who are placed on academic suspension and wish to appeal should follow the appeal process established by the College. Students may be reinstated at the conclusion of the suspension period by following the process established by the College. Students who have been reinstated from academic suspension must achieve a 2.00 GPA for the semester of their reinstatement and must earn at least a 1.75 GPA in each subsequent semester of attendance. The statement “Subject to Dismissal” will be placed on their permanent record. Students who have been reinstated from academic suspension will remain subject to dismissal until their cumulative GPA is raised to a minimum of 1.75. Reinstated students may be required to carry less than a normal course load the following semester and are required to consult with their advisor/counselor. Reinstated students are encouraged to take advantage of additional academic support available to them.

### **Academic Dismissal**

Students who do not attain at least a 2.00 GPA for the semester of reinstatement following academic suspension will be academically dismissed. Students who achieve at least a 2.00 GPA for the semester of their reinstatement following academic suspension must earn at least a 1.75 GPA in each subsequent semester of enrollment. Failure to attain a 1.75 GPA in each subsequent semester until the cumulative GPA reaches 1.75 will result in academic dismissal. The statement “Academic Dismissal” will be placed on the student’s permanent record. Academic dismissal is normally final, but students who believe they have an exceptional case may appeal to the dean of students for reinstatement following an absence of five years (60 months). To appeal, the student must submit a written request to the dean of students explaining why he/she did not do well in the past and why the student thinks he/she will be successful if allowed to return to the College. The student must submit an appeal at least 30 days before the start of the semester when he or she wishes to return. Students who are readmitted after dismissal should consult College policy on academic renewal, which follows. Students who are reinstated after academic dismissal will remain subject to dismissal until their cumulative GPA is raised to a minimum of 1.75. Reinstated students may be required to carry less than a normal course load the following semester and are required to consult with their advisor/counselor. Such students are encouraged to take advantage of additional academic support available to those who have been reinstated following academic dismissal.

### **College Procedures for Students Academically Suspended or Dismissed**

The procedures listed below apply to students who have been academically suspended or dismissed:

1. Notice of a student’s academic suspension/dismissal is provided through both his/her grade report on NOVACConnect and a letter sent from the College that describes the suspension/dismissal policy and the steps available for appealing.
2. A “hold” will be placed on the student’s record so that he/she cannot register. The hold will indicate “academic suspension” or “academic dismissal” and is a part of the student’s academic record.
3. Students who choose to appeal are required to write a letter to the chair of the Admissions Committee requesting an exception to the policy. The letter should detail the causes for academic difficulties and describe remedies the student proposes to improve his or her academic performance.
4. Students who are requesting reinstatement to the College must meet with a counselor and/or dean of students.

5. The campus dean of students will make the reinstatement decision.
6. The dean of students' reinstatement decision may be appealed to the campus provost.

### Academic Renewal

Students who return to the College after a separation of five years or more may petition for academic renewal. The request must be in writing and submitted to a campus Student Services Center.

For students who are found to be eligible for academic renewal, "D" and "F" grades earned prior to reenrollment will be deleted from the cumulative and curriculum grade point average (GPA), subject to the following conditions:

- Prior to petitioning for academic renewal, the student must demonstrate a renewed academic interest and effort by earning at least a 2.50 GPA in the first 12 semester hours completed at NOVA after reenrollment.
- All grades for credit courses received at the College will be a part of the student's official transcript.
- The student will receive degree credit only for courses in which grades of "C" or better were earned prior to academic renewal, providing that such courses meet current curriculum requirements.
- Total hours for graduation will be based on all coursework taken at the College after readmission, as well as former coursework for which a grade of "C" or better was earned, and credits accepted from other colleges or universities.
- The academic renewal policy may be used only once and cannot be revoked after approval by the dean of students.
- Academic renewal cannot be applied to a degree or certificate that has already been conferred.

## Academic Options

### Apprenticeship Training

Apprenticeship training programs are approved through the Apprentice Division of the Virginia State Department of Labor and Industry. Formal apprentice training programs are subcontracted by the Virginia Community College System to local school boards. These programs include approved on-the-job experiences and related instruction classes. NOVA offers many of the related instruction classes specified in apprenticeship programs. In addition, NOVA offers certificates associated with apprenticeship programs in air conditioning and refrigeration at the Woodbridge Campus and culinary arts at the Annandale Campus.

### Cooperative Education and Internships

Cooperative Education and Internship courses provide the opportunity for students to apply the concepts and skills learned in the classroom to a job situation. The professional and technical experience gained through Cooperative Education establishes a record of performance in one's career field and eases entry into a permanent career position. Students who co-op with a federal government agency can be retained noncompetitively in a permanent position upon graduation.

To be eligible to participate in Cooperative Education or Internship courses, students must have

- declared a major in a NOVA degree or certificate program;
- successfully completed 15 semester hours of college work or the equivalent, including transfer credit;
- successfully completed a minimum of two courses in a major area of study at NOVA;
- obtained a 2.00 or better grade point average; and
- obtained divisional approval after a review of the student's academic/employment record and a determination of his/her potential for success in a co-op position or internship.

Credit earned in Cooperative Education and Internship courses may be used as a substitute for up to 10 credits of coursework in selected degree programs if approved by the student's academic advisor, used for elective credit, or earned as additive credit. For more information, see [www.nvcc.edu/co-op](http://www.nvcc.edu/co-op).

### Developmental Studies

Developmental courses are offered to prepare students to succeed in the College transfer and career/technical programs. These English (ENF) and mathematics (MTT) courses are designed to develop the basic skills and understanding needed for success in other courses and curricula.

After taking the placement test, advisors will help students determine which ENF and MTT courses they may need. In some cases, students must complete developmental courses before enrolling in certain courses or being admitted to a curriculum. In other cases, students can take college-level courses along with developmental courses.

Credits earned in these courses are not applicable toward associate degree, certificate, or career studies certificate programs.

A wide variety of instructional methods and materials are used at the College for developmental courses. ENF courses are offered in a variety of formats.



MTT courses use individualized technology-based instruction. Students who have any questions should check with a counselor or academic advisor.

### Extended Learning Institute

NOVA Online offers online learning courses. NOVA Online courses are designed to offer “anytime access” to higher education from the convenience of one’s home or office. Online courses are primarily web-based and require access to the Internet. Courses are designed to do the following:

- create a community of learners
- support communication between student and faculty
- guide students to valuable and appropriate resources

Some things to consider when choosing an online learning course are the following:

- To be successful, students need strong reading and time-management skills, and must be self-disciplined and motivated.
- Additional technology may be required, including web conferencing software for live meetings or office hours, using live chat or social media tools like Twitter, or using interactive websites in addition to accessing materials in Blackboard.
- Some online courses require in-person meetings or labs, and some require live meetings attended from home via web conferencing.
- All NOVA Online courses require at least two proctored exams. Students should follow the instructions in their course syllabus for specific requirements. Examinations in NOVA Online online learning courses can be taken at any NOVA campus Testing Center during open Testing Center hours. Individuals living outside the Washington, DC metropolitan area may arrange to have exams proctored by a NOVA-approved proctor. Exams in most courses may also be taken from home using NOVA Online’s online proctoring service.
- Some online learning courses allow students the flexibility to work ahead on their own and complete a course early, while others require students to keep the same basic pace as their classmates. Be sure to check individual course descriptions for specific requirements or contact the individual instructor with questions.

### Program Administration

Degrees and certificates offered by NOVA Online are administered by NOVA campus academic divisions. Students may complete a NOVA degree or certificate program entirely through NOVA Online, entirely through a campus, or by combining NOVA Online and campus courses. Prospective degree candidates should contact a NOVA Online counselor, a campus

counselor, or an academic advisor to plan their program of study.

### Textbooks

Textbooks for NOVA Online courses might not be the same as those used on campus, so students should check the NOVA Online bookstore specifically when looking for textbook information. NOVA Online books may be purchased or rented through the Alexandria Campus bookstore or ordered online at <http://nvcc-alexandria.bkstore.com>, by fax, or mail. Typically, books ordered from the bookstore by mail are shipped the same day.

### Assignments

Students are required to submit assignments by specific due dates. Students who do not submit these assignments on time can be dropped from the course with a grade of “W.”

### Honors

Qualified, highly motivated students may enrich their study through participation in NOVA’s Honors Program or by enrolling in individual Honors courses. Honors chairs and Honors counselors are available at each campus to help students decide if the Honors Program or specific Honors courses will help focus their academic goals. Student Services Center staff, counselors, and advising specialists also can provide students with further information.

Honors courses differ from regular sections as they incorporate REAL components: Research, Enrichment, Academic rigor, and Leadership, which go beyond the basic course material. Within these courses, students are encouraged to think independently and critically, to participate actively in discussions, and to collaborate with their fellow Honors students, building a community of highly engaged peers. These courses stimulate broader and deeper consideration of the subject matter and encourage the exploration of the interrelationships of ideas across disciplines.

Each Honors course has a special transcript indicator. Universities and employers often favor students who seek the greater challenge offered through Honors courses.

Honors course offerings may vary from campus to campus. Typically, Honors courses are offered as follows:

- **Honors Courses:** special sections are designated as full Honors courses with an average of 16–18 students in a seminar-style setting, restricted to Honors students only, and
- **Honors Options:** regular sections in which Honors students complete the REAL Honors components.

## Eligibility

### Eligibility for Honors Courses

Students must complete all course prerequisites AND meet at least ONE of the criteria listed below:

- score at least 1200 out of 1600 on the SAT critical reading and math sections or at least 1800 out of 2400 with a score of at least 600 on each section; OR
- place into Honors English and/or Honors math based on placement test scores as indicated by a Testing Center representative; OR
- document a cumulative GPA of at least 3.5 at the last academic institution attended (high school, college, or university); OR
- provide recommendations from two instructors, counselors or advisors based on any course taken in high schools, college, or university OR
- provide a recommendation from the Honors chair, Honors counselor, or Honors instructor teaching the requested Honors course(s). This recommendation should indicate the student's life experience, special aptitude, or interest that indicates potential for success in an Honors course.

### Eligibility for the Honors Program

Students who meet at least one of the criteria listed above must request an interview with a campus Honors chair to be considered for admittance into the Honors Program. Depending upon other factors, students may be required to have successfully completed at least 6 credits of Honors courses in order to be admitted to the Program.

1. To be eligible for the Honors Interdisciplinary Seminar, students must have completed a minimum of 3–6 semester hours in Honors courses. Campus Honors chairs have lists of courses that may be offered as interdisciplinary seminars.
2. Elective credits may come from any discipline offering an Honors course.
3. At least 9 credits of full Honors courses must be applied toward the total Honors Core Curriculum credits. Other courses may be Honors option or full Honors courses.
4. NOVA Online Honors courses will be considered on a case by case basis (contact a campus Honors chair for more guidance).

## Honors Program

The Honors Program provides a comprehensive, educational experience for Honors students and allows them to interact as a community of learners. The Honors Program is designed to provide motivated students with an enriched program of study that

includes, but is not limited, to

- academic scholarships
- field trips
- campus and community service projects
- internships
- leadership opportunities
- campus- and College-wide honors events
- exemplary guest speakers
- letters of recommendation
- Campus Honors Club
- special transfer opportunities to selective institutions

The Honors Program is distinguished by its Honors Core Curriculum, comprised of specific courses within the categories listed in the following chart:

Discipline	Credits
English	3
Humanities/Fine Arts	3
Social/Behavioral Sciences	3
Physical and Life Sciences/Mathematics	3–5
<sup>1</sup> Interdisciplinary Seminar or 200-level Honors course that is part of a learning community or Honors Study Abroad or Approved Honors Internship	3
<sup>2</sup> Electives	3–4
<sup>3</sup> Total	18–21

- <sup>1</sup> To take the Honors Interdisciplinary Seminar, it is recommended that students have completed a minimum of 3 semester hours in Honors English and 3 semester hours of the humanities, social/behavioral sciences, and/or math/science Honors unit.
- <sup>2</sup> Elective credits may come from any discipline offering an Honors course.
- <sup>3</sup> Only 9 credits of Honors option courses can be used toward the total Honors Core Curriculum credits.

### Honors Program Completion

Students may satisfy the requirements of both the Honors Program and their degree program by enrolling in the Honors or Honors options courses within the degree program requirements. Campus Honors chairs, advisors, and counselors can assist students with course selection.

Continuation in the Honors Program is contingent upon a student maintaining good academic standing and adhering to the Student Code of Conduct. Receiving more than one grade lower than a "C" in an Honors course will result in dismissal from the Program or probation based on

GPA status. To graduate with Honors, a student must maintain a cumulative GPA of 3.0 or higher AND an Honors GPA of 3.275 or higher with no Honors course grade below a "C."

Completion of the Honors Program will be designated on the student's official transcript and diploma. Students will also receive the Honors Certificate of Completion. This represents a significant enhancement of one's academic credentials.

### **Learning Communities**

Learning Communities are part of an innovative program for enriching student success. NOVA offers selected pairs of courses that form learning communities by linking developmental studies, Honors courses, or courses related to a particular major. A common cohort of students enrolls in the linked classes and works together with faculty on shared assignments and learning opportunities. Learning Communities will focus on helping students become a better learner, while learning more about themselves and how they learn. This is an opportunity for students to get to know their professors and classmates better, to build a supportive academic network, and to improve their study skills to become a successful college student. The Student Services Center on each campus has more information about Learning Communities at NOVA.

### **Military-Related Programs**

#### **ROTC (Army/Air Force)**

NOVA, the Air Force ROTC, and the University of Maryland have established an agreement to make the Air Force ROTC General Military Course and/or Professional Officer Course available to qualified NOVA students who wish to earn an appointment as a commissioned officer in the U.S. Air Force. For more information, contact the University of Maryland Air Force ROTC office.

#### **Servicemembers Opportunity College (SOC)**

NOVA has been designated as an institutional member of Servicemembers Opportunity Colleges (SOC), an association of more than 1,900 colleges and universities providing voluntary postsecondary education to members of the military throughout the world. As an SOC member, NOVA recognizes the unique nature of the military lifestyle and has committed itself to easing the transfer of relevant course credits, providing flexible academic residency requirements, and providing credit for learning from appropriate military training and experiences. SOC has been developed jointly by educational representatives of each of the Armed Services, the Office of the Secretary of Defense, and a consortium of 14 leading national higher education associations;

it is sponsored by the American Association of State Colleges and Universities (AASCU) and the American Association of Community Colleges (AACC).

In addition to its SOC membership, NOVA is one of approximately 50 institutions providing career and flexible Servicemembers Opportunity Colleges Associate Degree (SOCAD) programs on more than 500 Army installations worldwide. These programs lead to associate degrees and most of them correspond to enlisted and warrant officer job specialties. Through prior agreement, students in SOCAD programs qualify to

- have residency credit limited to one-fourth of total degree requirements taken at any time;
- be awarded credit for experience in their military occupational specialties (MOS) and service schools as appropriate to their program;
- be awarded credit for nontraditional learning based on results of national tests, such as CLEP and SSTs, as appropriate to their program;
- have a SOCAD Student Agreement completed as their official evaluation stating remaining degree requirements and eliminating the need for reevaluation of previous credit; and
- be guaranteed that courses listed in transferability charts in the *SOCAD Handbook* will be accepted for degree requirements within each curriculum area.

### **Professional Studies Coursework**

Some individuals may wish to prepare for study leading to advanced professional degrees in such fields as dentistry, law, medicine, occupational therapy, optometry, pharmacy, physical therapy, and veterinary medicine. Through NOVA, students can pursue some foundation coursework to facilitate this goal.

NOVA does offer a number of programs in the allied health professions; however, these programs have restricted admission. Visit [www.nvcc.edu/medical](http://www.nvcc.edu/medical) to learn about admission to these programs.

Students who wish to meet professional goals by enrolling in nonrestricted foundation coursework should consult an advisor or counselor.

### **Study Abroad**

NOVA offers occasional study abroad opportunities under a variety of disciplines. They are treated as regular credit courses, requiring registration for the course, satisfaction of prerequisites, and assignments completed for a final grade. Study abroad courses count toward the residency requirement for program completion. The related travel expenses are the responsibility of the student. Contact the instructor or academic dean for information about study abroad.

## Weekend Courses and Programs

Weekend courses and programs provide students with additional opportunities to pursue their education. Weekend courses are offered at all campuses. Students may accelerate work toward a degree or seek professional enrichment and growth in a time frame conducive to their professional and personal lives through weekend courses. Any student can register for weekend classes; there is no special permission required.

Some campuses offer programs leading to a degree or certificate entirely through weekend coursework. The Annandale Campus offers a Weekend Express Program and a Weekend Studies Degree Program. For further information about these programs, go to [www.nvcc.edu/annandale/special-programs/index.html](http://www.nvcc.edu/annandale/special-programs/index.html). The Woodbridge Campus offers weekend programs in Business Administration and Information Technology. Weekend courses and programs may be found in the regular course listings in the *Schedule of Classes*.

## Workforce Development, Continuing Education, and Community Education Services

The Workforce Development Division helps to plan and provide many types of credit and noncredit programs to meet special interests within the community. The topics vary from job skills to personal enrichment interests. Various community education programs and seminars focus attention on social issues. Workforce development services for business, industry, and professional organizations provide special courses at NOVA for their employees. These programs can be taught at the College or in the workplace.

Many noncredit programs are offered each semester to serve special community service needs. A listing of the continuing and community education courses offered at each campus can be found online at [www.nvcc.edu/workforce](http://www.nvcc.edu/workforce).

Courses and workshops often result from requests by individuals or groups within the community. The programs pay for themselves through fees charged to participants. State funds are not used for setting up or offering a course or paying the instructor. Fees for community education courses vary depending upon the actual cost of each course. Community education course information and registration instructions are available at each campus Workforce Development Office.

Payment for courses may be made by cash, check, money order, contract, Visa, MasterCard, or American Express. Checks and money orders (payable to NVCC or NOVA) can only be accepted for the exact amount due. A fee is charged for any check that is dishonored, except when the bank is at fault. Requests for refunds must be made at least four calendar days before the date of the first class meeting.

Cultural affairs are available through short courses, special lectures, music presentations, and art festivals. Community groups and organizations may also make special arrangements to use facilities of the College for their own programs or meetings.

To qualify as a community education College course, the following standards must be met:

- The noncredit activity is planned in response to an assessment of educational needs for a specific target population.
- There is a statement of objectives and rationale.
- Content is selected and organized in a sequential manner.
- There is evidence of preplanning.
- The activity is instructional and is approved by an academic or administrative unit of the institution best qualified to affect the quality of the program content and to approve the resource personnel utilized.
- There is provision for enrollment for individual participants.
- Evaluation procedures are utilized.
- Criteria are established for awarding Continuing Education Units to individual students prior to the beginning of the activity.

## Continuing Education Units (CEU) for Noncredit Courses

The College awards Continuing Education Units (CEU) upon completion of most noncredit courses. One CEU represents 10 hours of participation in workforce development and continuing education courses. CEUs are a nationally recognized standard unit of measurement that has been adopted for postsecondary courses not carrying academic credit. Permanent CEU records are maintained by NOVA. CEUs are increasingly accepted as evidence of educational accomplishment and for professional certification.



# ACADEMIC PROGRAMS AND REQUIREMENTS

## Degrees and Certificates

Northern Virginia Community College offers two-year associate degrees, one-year certificates, and short career studies certificates. The requirements for completion of these awards are determined by the College faculty and are intended to meet the requirements specified by the Commonwealth of Virginia, the Southern Association of Colleges and Schools Commission on Colleges, and certain specialized accrediting agencies.

### Terminology

Unless otherwise noted, the term *program* refers to an associate degree with its own curriculum code and all related specializations, certificates, and career studies certificates. The Virginia Community College System defines a *major* as a grouping of 100- and 200-level courses that define a discipline or interdisciplinary specialty. A *degree program* is a broadly structured curriculum leading to the award of an associate degree and is listed on a student's diploma. A *specialization* is an area of concentration within an approved major that varies from the parent major by 9–15 credits. A *certificate* is awarded for the completion of an approved nondegree curriculum consisting of 30–59 semester credit hours, usually in a career area; a minimum of 15 percent of a certificate's credit hour requirement will be in general education including one three-credit-hour English course. A *career studies certificate* is awarded for the completion of an approved nondegree curriculum of 9–29 semester credit hours in length.

### Associate of Arts Degree (A.A.)

Awarded for the completion of two-year curricula in fine arts, liberal arts, and music. The A.A. degree is designed for those who plan to transfer to a four-year, degree-granting institution to complete a bachelor of arts (B.A.). A complete list of NOVA's A.A. degree programs can be found at the end of this *Catalog*.

### Associate of Science Degree (A.S.)

Awarded for the completion of two-year curricula in a variety of preprofessional programs. The A.S. degree is designed for those who plan to transfer to a four-year, degree-granting institution to complete a bachelor of science (B.S.). A complete list of NOVA's A.S. degree programs can be found at the end of this *Catalog*.

### Associate of Fine Arts Degree (A.F.A.)

Awarded for the completion of two-year curricula in the fine and performing arts. The A.F.A. degree is designed for those who plan to transfer to a four-year degree-granting institution to complete a Bachelor of Fine Arts or similar degree in fine arts and/or visual or performing arts. A significant portion of the A.F.A. is in general education that is typical of the first two years at a four-year institution. A complete list of NOVA's A.F.A. degree programs can be found at the end of this *Catalog*.

### Associate of Applied Arts Degree (A.A.A.)

Awarded for completion of two-year curricula primarily



designed to prepare a student for employment in jobs in fine arts, music, and photography. These curricula are not designed for transfer to a four-year college or university. However, in some limited cases, the A.A.A. degree or selected career courses may transfer, and there may be articulation arrangements with senior institutions to facilitate such transfer. A complete list of NOVA's A.A.A. degree programs can be found at the end of this *Catalog*.

### Associate of Applied Science Degree (A.A.S.)

Awarded for completion of two-year curricula designed to prepare students for employment in a technical field immediately following graduation. In some A.A.S. degree programs one or more Summer Sessions may be required. These curricula are not designed for transfer to a four-year college or university. However, in some limited cases, the A.A.S. degree or selected career courses may transfer, and there may be articulation arrangements with senior institutions to facilitate such transfer. A complete list of NOVA's A.A.S. degree programs can be found at the end of this *Catalog*.

### Certificate (C.)

Awarded for the completion of various curricula of study less than two years in length, totaling between 30 and 59 credits, at least 15 percent of the credits must be in general education, including at least 3 semester credits of English (ENG). Certificates must also include at least 1 semester credit in a Student Development (SDV) course.

Most certificates prepare students for a specific job or aspect of a job. Some certificates are part of an associate degree program, in which case the credit earned in the certificate may be used toward the degree. These curricula typically are not designed for transfer to a four-year college or university. The General Education Certificate is an exception; it does not prepare students for employment, but is designed to transfer. A complete list of NOVA's certificate programs can be found at the end of this *Catalog*.

### Career Studies Certificate (C.S.C.)

Awarded for a specific group of career-related courses totaling between 9 and 29 credits. Career studies programs are designed for enhancement of job/life skills, retraining for career changes, and/or investigating new career possibilities. Credit earned in most career studies certificates may be used to meet the requirements in related certificate or degree programs, although a few are not closely related to a degree or certificate. A complete list of NOVA's career studies certificate programs can be found at the end of this *Catalog*.

## Degree Requirements

The following grid shows the number of credit hours required for each component of a degree.

Components	Degree				
	A.A.	A.S.	A.A.A.	A.A.S.	A.F.A.
<sup>1</sup> Written and Oral Communication	9	9	6	3	6
<sup>2</sup> Humanities/ Fine Arts	6	6	3	3	3-9
<sup>3</sup> Foreign Language	6	-	-	-	-
<sup>4</sup> Social/Behavioral Sciences	9	9	3	3	3-9
<sup>5</sup> Mathematics	6	6	3	3	3
<sup>6</sup> Physical and Life Science	8	8			4
<sup>7</sup> Other General Education	-	-	-	-	-
Minimum Total General Education Requirements	44	38	15	15	22-28
<sup>8</sup> SDV Elective	1	1	1	1	1
<sup>9</sup> Elective and Major Area Requirements	15-18	21-24	44-53	44-53	31-37
<sup>10</sup> Total Credits*	60-63	60-63	60-69	60-69	60-63

\*Minimum credits required for each degree program as specified by the Virginia Community College System.

#### <sup>1</sup> Written and Oral Communication

FA.A., A.S. and A.F.A. degrees require ENG 111 College Composition I and ENG 112 College Composition II or ENG 125 Introduction to Literature. A 3-credit oral communication course is also required.

A.A.A. degrees require 3 credits in English composition (ENG 111 College Composition, ENG 115 Technical Writing, or ENG 131 Technical Report Writing) and an oral communication course.

A.A.S. degrees require 3 credits in English composition (ENG 111 College Composition I, ENG 115 Technical Writing, or ENG 131 Technical Report Writing).

See the "General Education Electives" section for a list of approved general education courses.

#### <sup>2</sup> Humanities/Fine Arts

Humanities requirements may be met by selected courses in art (ART), 200-level literature (ENG), humanities (HUM), music (MUS), philosophy (PHI),

religion (REL), American Sign Language (ASL), and 200-level foreign language courses. See the “General Education Electives” section for a list of approved general education humanities/fine arts courses.

AFA programs cannot require both 9 credits of humanities/fine arts courses and 9 credits of social/behavioral science courses. AFA programs must include a 200-level literature course as one of the humanities/ fine arts requirements.

### **3 Foreign Language**

Students who are in an A.A. program must demonstrate proficiency in a foreign language through the intermediate (201–202) level, which is consistent with the lower division requirements for most B.A. degrees. Waivers or credit by exam (through CLEP) for previous experience may be available for some languages. SPA 205-206 also meets this requirement.

### **4 Social/Behavioral Sciences**

Social/behavioral science requirements may be met by selected courses in economics (ECO), geography (GEO), history (HIS), political science (PLS), psychology (PSY), and sociology (SOC).

Only 6 semester hours of social/behavioral sciences are required for engineering majors who plan to transfer to a baccalaureate degree engineering program that requires 6 or fewer hours in this category, provided that the college/university publishes such requirements in its transfer guide.

AFA programs cannot require both 9 credits of social/behavioral science and 9 credits of humanities/ fine arts electives.

See the “General Education Electives” section for a list of approved general education social/behavioral science courses.

### **5 Mathematics**

A.A. and A.S. degrees require a minimum of 6 credits in mathematics at or above MTH 154. The A.S. in General Studies requires only 3 credits of mathematics.

A.A.A. and A.A.S. degrees require a minimum of 3 credits in mathematics or 4 credits of physical/life sciences.

Note that the mathematics courses offered by NOVA changed completely in Fall 2018. Please see your advisor if you have questions about how the old math courses can be applied to new degree programs and how the new math courses can be applied to programs begun prior to Fall 2018.

See the “General Education Electives” section for a list of approved general education math courses.

### **6 Physical and Life Sciences**

A.A. and A.S. degrees require 8 credits in courses in physical and life sciences that include laboratories. Courses may be chosen from biology (BIO), chemistry (CHM), environmental science (ENV), geology (GOL), natural science (NAS) (non-science majors only), or physics (PHY). Some four-year degree programs require a two-semester sequence in a single laboratory science.

A.A.A. and A.A.S. degrees may or may not require a physical/life science, depending on the curriculum.

See the “General Education Electives” section for a list of approved general education science courses.

### **7 Other General Education**

To meet SACSCOC accreditation and VCCS requirements, any given degree program MUST include at least 15 credits in general education courses; the additional credit for the A.A.S. degree may be in any of the general education areas.

### **8 SDV Elective**

All degrees require a one-credit Student Development course, either SDV 100 College Success Skills or SDV 101 Orientation to a specific discipline. All Student Development courses cover topics related to academic success, responsible decision making, and College information. Some sections address additional topics. First-time NOVA students are required to take an SDV course within their first 15 semester hours at the College.

### **9 General Elective and Major Area Requirements**

Not all courses will transfer to all senior institutions or meet the requirements of a given four-year degree. Students who plan to transfer should refer to transfer pathways posted to the NOVA website. If no pathway is available for the desired senior institution, students should see a counselor or academic advisor prior to registering for general electives. Students who plan to transfer to a four-year degree program should become familiar with the requirements of the intended transfer institution and select electives that meet that institution’s requirements..

### **10 Total Credits**

A.S. degrees typically require between 60 and 63 credits. However, VCCS policy allows Engineering programs to require as many as 72 credits.

A.A.S. degrees require between 65 and 69 credits, with the exception of Health Science programs, which may require as many as 72 credits.

## General Education Electives

General education is that portion of the collegiate experience that addresses the knowledge, skills, attitudes, and values characteristic of educated persons. It is unbounded by disciplines and honors the connections among bodies of knowledge. NOVA degree graduates will demonstrate competency in the following general education areas: communication, critical thinking, cultural and social understanding, information literacy, personal development, quantitative reasoning, and scientific reasoning.

Consequently, the College, in accord with the general education guidelines of the Virginia Community College System, has determined the following list of general education electives.

It is highly recommended that students consult with their academic advisor or counselor in order to select the most appropriate course for their curriculum and/or transferability to another college.

### Humanities/Fine Arts Electives

ARC 200	History of Architecture
ART 100	Art Appreciation
ART 101–102	History and Appreciation of Art
ART 106	History of Modern Art
ART 150	History of Film and Animation
ART 250	History of Design
ASL 201-202*	American Sign Language III-IV
CHI 201-202	Intermediate Chinese I-II
CST 130	Introduction to the Theatre
CST 141	Theatre Appreciation I
CST 151	Film Appreciation I
ENG 230	Mystery in Literature and Film
ENG 236	Introduction to the Short Story
ENG 237	Introduction to Poetry
ENG 241-242	Survey of American Literature I-II
ENG 243-244	Survey of English Literature I-II
ENG 250	Children's Literature
ENG 251-252	Survey of World Literature I-II
ENG 253	Survey of African-American Literature I
ENG 256	Literature of Science Fiction
ENG 257	Mythological Literature
ENG 271	The Works of Shakespeare I
ENG 279	Film and Literature
FRE 201-202	Intermediate French I-II
GER 201-202	Intermediate German I-II
GRE 201-202	Intermediate Ancient Greek I-II
HUM 201-222	Survey of Western Culture I-II

HUM 210	Introduction to Women in Humanities
HUM 220	Introduction to African-American Studies
HUM 259	Greek Mythology
ITA 201-202	Intermediate Italian I-II
JPN 201-202	Intermediate Japanese I-II
LAT 201-202	Intermediate Latin I-II
MUS 121-122	Music Appreciation I-II
MUS 221	History of Music I
MUS 225	History of Jazz
PHI 101	Introduction to Philosophy I
PHI 111	Logic I
PHI 115	Practical Reasoning
PHI 220	Ethics
PHI 227	Biomedical Ethics
PHT 110	History of Photography
REL 100	Introduction to the Study of Religion
REL 231	Religions of the World I
REL 232	Religions of the World II
REL 233	Introduction to Islam
RUS 201-202	Intermediate Russian I-II
SPA 201-202	Intermediate Spanish I-II
SPA 205-206	Spanish for Heritage Speakers I-II

\*Check with your advisor to see if ASL meets the foreign language requirement at your transfer school.

### Oral Communication

CST 100	Principles of Public Speaking
CST 110	Introduction to Communication
CST 126	Interpersonal Communication
CST 229	Intercultural Communication

### Other General Education Electives

ENG 111	College Composition I
ENG 112	College Composition II
ENG 125	Introduction to Literature
SDV 100	College Success Skills
SDV 101	Orientation to:

### Physical and Life Sciences/ Mathematics Electives

BIO 101–102	General Biology I–II
CHM 101–102	Introductory Chemistry I–II
CHM 111–112	General Chemistry I–II
ENV 121–122	General Environmental Science I–II
GOL 105	Physical Geology
GOL 106	Historical Geology
GOL 111–112	Oceanography I–II
NAS 101–102	Natural Sciences I–II
NAS 125	Meteorology
PHY 150	Elements of Astronomy
PHY 101–102	Introduction to Physics I–II



PHY 201–202	General College Physics I–II
PHY 231–232	General University Physics I–II
MTH 154	Quantitative Reasoning
MTH 155	Elementary Statistics
MTH 161–162	Precalculus I–II
MTH 167	Precalculus with Trigonometry
MTH 245-246	Statistics I-II
MTH 261-262	Applied Calculus I-II
MTH 263-264	Calculus with Analytic Geometry I–II

### **Social/Behavioral Sciences Electives**

ECO 201–202	Principles of Macro and Micro Economics
GEO 200	Introduction to Physical Geography
GEO 210	Introduction to Cultural Geography
GEO 220	World Regional Geography
HIS 101–102	History of Western Civilization
HIS 111–112	History of World Civilization HIS
121–122	United States History I–II
PLS 135	American National Politics
PLS 140	Introduction to Comparative Politics
PLS 211	U.S. Government I
PLS 241	International Relations I
PSY 200	Principles of Psychology
PSY 216	Social Psychology
PSY 230	Developmental Psychology
SSC 115	Introduction to Global Affairs
SOC 200	Principles of Sociology
SOC 211-212	Principles of Anthropology I-II
SOC 268	Social Problems

# PROGRAMS OF STUDY

## Accounting

Associate of Applied Science Degree

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** The curriculum is designed for persons who seek employment in the accounting field or for those presently in accounting who wish to increase their knowledge and update their skills. Job opportunities include accounting trainee, accounting technician, junior accountant, and accountant.

For students interested in qualifying for the CPA exam and did not major in business, this degree will provide the necessary business courses and the introductory Accounting courses required. After completion of this degree the student should consider enrolling in the Career Studies Certificate to obtain the remaining accounting courses necessary to be eligible to sit for the CPA exam.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Recommended Preparation:** The student should possess a proficiency in high school English and a strong background in basic arithmetic.

Two Years		Credits
<b>1st Semester</b>		
ACC	211 Principles of Accounting I	3
BUS	100 Intro. to Business	3
ENG	111 College Composition I	3
ITE	115 Intro. to Computer Applications and Concepts	3
MTH	154 Quantitative Reasoning or Higher	3
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
ACC	212 Principles of Accounting II	3
ACC	215 Computerized Accounting	3
CST	110 Intro. to Communication or CST 227 Business and Professional Communication	3
ECO	120 Survey of Economics	3
ITE	140 Spreadsheet Software	3
	<b>Total</b>	<b>15</b>
<b>3rd Semester</b>		
ACC	221 Intermediate Accounting I	3
ACC	231 Cost Accounting I	3
ACC	261 Principles of Federal Taxation I	3
BUS	241 Business Law I	3
ENG	112 College Composition II	3
	<b>Total</b>	<b>15</b>

4th Semester		
ACC	222 Intermediate Accounting II	3
ACC	241 Auditing I	3
BUS	200 Principles of Management	3
BUS	220 Intro. to Business Statistics	3
FIN	215 Financial Management	3
PHI	220 Ethics	3
	<b>Total</b>	<b>18</b>

**Total credits for the A.A.S. Degree in Accounting = 64**

Upon the completion of this program, students may consider the Accounting Career Studies Certificate. Additional courses needed are as follows: ACC 219 Government and Non-Profit Accounting, ACC 262 Principles of Federal Taxation II, and ACC 230 Advanced Accounting.

## Accounting: Bookkeeping Certificate

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** The program is designed to provide the student with sufficient knowledge to keep a simple set of accounting books and/or to qualify for entry-level positions in bookkeeping and accounting.

**Recommended Preparation:** The student should possess a proficiency in high school English and a good background in basic arithmetic operations.

One Year		Credits
<b>1st Semester</b>		
ACC	211 Principles of Accounting I	3
BUS	100 Intro. to Business	3
ENG	111 College Composition I	3
ITE	115 Intro. to Computer Applications and Concepts	3
MTH	154 Quantitative Reasoning	3
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
ACC	212 Principles of Accounting II	3
ACC	215 Computerized Accounting	3
CST	227 Business and Professional Communication or CST 110 Intro. to Communication	3
ITE	140 Spreadsheet Software	3
ECO	120 Survey of Economics	3
	<b>Total</b>	<b>15</b>

**Total credits for the Bookkeeping Certificate = 31**

Students may consider the AAS in Accounting at this point. All classes would apply to the AAS.

## Accounting Career Studies Certificate

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** This curriculum will provide students with the accounting courses needed to meet the requirements of the Virginia Board for Accountancy

to sit for the Certified Public Accountancy (C.P.A.) examination. To meet the educational requirements to sit for the Virginia CPA exam, a candidate must obtain from one or more accredited institutions or from the National College the following:

- at least 120 semester hours of education;
- baccalaureate or higher degree; and
- accounting concentration or equivalent\*

Requirements include:

- a minimum of 24 semester hours of accounting courses, to include courses in auditing, financial accounting, management accounting, and taxation; and
- a minimum of 24 semester hours of business courses. As many as 6 hours of accounting courses (not included in the 24 hours of accounting courses) may be considered for the business course requirement.

\*Principles or introductory accounting courses cannot be considered in determining whether a person has obtained the 48 minimum number of semester hours required for an accounting concentration or equivalent.

**Admission Requirements:** Successful completion of ACC 211 and ACC 212 Principles of Accounting I–II or equivalent as demonstrated through transcript evaluation.

These accounting courses may also meet accounting requirements of various government and private sector positions.

Students on Financial Aid should consider the AAS in Accounting Degree in order to get financial aid coverage of ACC-211 and ACC-212.

Students who do not have the required business courses may find the AAS in Accounting Degree a good alternative for covering all CPA requirements.

One Year		Credits
<b>1st Semester</b>		
ACC	219 Government and Not-For-Profit Accounting	3
ACC	221 Intermediate Accounting I	3
ACC	231 Cost Accounting I	3
ACC	261 Principles of Federal Taxation I	3
ENG	111 College Composition	3
<b>Total</b>		<b>15</b>
<b>2nd Semester</b>		
ACC	222 Intermediate Accounting II	3
ACC	230 Advanced Accounting	3
ACC	241 Auditing	3
ACC	262 Principles of Federal Taxation II	3
<b>Total</b>		<b>12</b>

**Total credits for the Accounting Career Studies Certificate = 27**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

Since the CPA exam is a computer-based test, students should be proficient with computers, including the ability to work with Windows, Word, and Excel.

## Administration of Justice

Associate of Applied Science Degree

Offered through AN, MA, WO

**Purpose:** The curriculum is designed to provide a broad foundation that will prepare students to enter any of the varied fields in criminal justice or to prepare for professional advancement. Job opportunities for students include local, state, and federal enforcement officers, police officers, private or government investigators, adult/juvenile correction officers, probation/parole officers and counselors, security directors (managers), loss prevention directors, classification managers, and personnel clearance administrators. Most of the ADJ courses in this curriculum are “core courses” that provide a basic entry-level foundation in both criminal justice and security administration. These courses must be taken by ALL STUDENTS in this program. At several points in the curriculum, “course options” are provided for selection by the students.

**Special Curriculum Admission Requirements:** Students are advised that many criminal justice and private/government security agencies require excellent moral character and a written record of conduct prior to consideration for employment.

Two Years		Credits
<b>1st Semester</b>		
	ADJ 100 Survey of Criminal Justice	3
<sup>1</sup>	ADJ 111 Law Enforcement Organization and Administration I	3
	ADJ Elective or BUS 100 Intro. to Business	3
	ENG 111 College Composition I	3
<sup>2</sup>	PED 116 Lifetime Fitness and Wellness	1
<sup>3</sup>	— Social Science Elective	3
	SDV 100 College Success Skills or SDV 101: Orientation section related to this program	1
<b>Total</b>		<b>17</b>
<b>2nd Semester</b>		
	ADJ 105 The Juvenile Justice System	3
	ADJ 107 Survey of Criminology	3
<sup>4</sup>	ADJ Elective or ADJ 159 Physical Security	3
<sup>5</sup>	MTH 154 Quantitative Reasoning	3
<sup>2</sup>	PED/RPK Elective	1
<sup>3</sup>	— Social Science Elective	3
<b>Total</b>		<b>16</b>

3rd Semester		
ADJ	211 Criminal Law, Evidence, and Procedures I	3
ADJ	216 Organized Crime and Corruption	3
ADJ	236 Principles of Criminal Investigation or ADJ 234 Terrorism and Counter-Terrorism	3
CST	110 Intro. to Communication	3
<sup>6</sup> _____	Humanities/Fine Arts Elective	3
ITE	115 Intro. to Computer Applications and Concepts	3
	<b>Total</b>	<b>18</b>

4th Semester		
ADJ	133 Ethics and the Criminal Justice Professional	3
ADJ	212 Criminal Law, Evidence, and Procedures II	3
ADJ	237 Advanced Criminal Investigation or ADJ 228 Narcotics and Dangerous Drugs or ADJ 248 Probation/Parole/Treatment	3
<sup>5</sup> ADJ	Elective	3
PLS	135 American National Politics or HIS 121 U.S. History I	3
	<b>Total</b>	<b>15</b>

**Total credits for the A.A.S. Degree in Administration of Justice = 66**

- <sup>1</sup> May substitute ADJ 140 or ADJ 150.
- <sup>2</sup> The PED requirements may be met by one of the following options: PED 116, 2 cr.; PED 116, 1 cr., plus a PED activities course, 1 cr.; or PED 116, 1 cr., plus RPK activities course. PED 116 is offered as both a 1-credit and a 2-credit course.
- <sup>3</sup> See social/behavioral science courses listed under General Education Electives. PSY 200 or SOC 200 are recommended.
- <sup>4</sup> Students interested in a career in the field of corrections should take corrections courses as ADJ electives.
- <sup>5</sup> Students who wish to substitute a laboratory science for MTH 154 MUST meet with their ADJ academic advisor first. The science elective may be selected from physical and life science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>6</sup> See humanities/fine arts courses listed under General Education Electives.

## Administration of Justice: Homeland Security Specialization

Associate of Applied Science Degree

Offered through AN, MA, WO, ELI

**Purpose:** This program prepares students for entry-level opportunities as a local, state, or federal law enforcement officer; commercial and industrial security officer; police officer; or private or government investigator, particularly in the areas of homeland security.

**Admission Requirements and Special Conditions:** A high school diploma (or equivalent) and satisfactory scores on College placement tests (or equivalent) in English and mathematics are required. Students should consult with academic advisors during course selection. Persons entering the public or private sectors of criminal justice employment will be subject to intensive physical agility tests, background investigations, psychological testing, personal interviews, physical examinations, and polygraph examinations.

Two Years		
1st Semester		
ADJ	100 Survey of Criminal Justice	3
<sup>1</sup> ADJ	234 Terrorism and Counter-Terrorism	3
<sup>2</sup> ENG	111 College Composition I	3
ITE	115 Intro. to Computer Applications and Concepts	3
<sup>3</sup> MTH	154 Quantitative Reasoning or Physical or Life Science Elective w/Lab	3-4
SDV	100 College Success Skills	1
	<b>Total</b>	<b>16-17</b>

2nd Semester		
ADJ	163 Crime Analysis and Intelligence or ADJ 154 Intelligence and Technology Analysis	3
<sup>4</sup> ADJ	Homeland Security Elective	3
CST	100 Principles of Public Speaking or CST 110 Intro. to Communications	3
GEO	230 Political Geography or ADJ 250 Global Security Concepts for Law Enforcement and National Security	3
PED	116 Lifetime Fitness and Wellness	1
SOC	200 Principles of Sociology	3
	<b>Total</b>	<b>16</b>

3rd Semester		
ADJ	212 Criminal Law, Evidence and Procedures II	3
ADJ	228 Narcotics and Dangerous Drugs	3
ADJ	236 Principles of Criminal Investigation	3
<sup>5</sup> ADJ	243 Homeland Security and Law	3
ADJ	247 Criminal Behavior	3
	<b>Total</b>	<b>15</b>

4th Semester		
ADJ	133 Ethics and the Criminal Justice Professional	3
ADJ	227 Constitutional Law for Justice Personnel or PBS 240 Constitutional Law	3
ADJ	240 Techniques of Interviewing	3
<sup>4</sup> ADJ	Homeland Security Elective	3
<sup>4</sup> ADJ	Homeland Security Elective	3
REL	231 Religions of the World I	3
	<b>Total</b>	<b>18</b>

**Total credits for the A.A.S. Degree in Administration of Justice with a Specialization in Homeland Security = 65-66**

- <sup>1</sup> Some instructors may incorporate FEMA IS-100LE and FEMA IS-340 for students in the process of obtaining their Certified Emergency Manager (CEM) certification, FEMA PDS (Professional Development Series) certificate, as well as state emergency management certifications.
- <sup>2</sup> ENG 111 is recommended for those students who may pursue a four-year degree. Students planning to transfer should work with an academic advisor in course selection. ENG 115 or ENG 131 may be substituted with the advice of a counselor or academic advisor.
- <sup>3</sup> Students may take any higher-lever MTH, especially if pursuing a four-year degree where most institutions will require a minimum of MTH 154. The science elective may be selected from physical and life science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>4</sup> Students may choose from any of the following homeland security electives: ADJ 127, ADJ 154, ADJ 160, ADJ 161, ADJ 163, ADJ 169, ADJ 170, ADJ 233, ADJ 240, ADJ 244 ADJ 250, ADJ 252, PBS 140, PBS 145, PBS 150, PBS 210, PBS 220, or other homeland security elective approved by an academic advisor, including ADJ 295 or ADJ 298. Some ADJ 244 instructors may incorporate FEMA IS-200 and FEMA IS-860 and some ADJ 252 instructors may incorporate FEMA IS-100LE and FEMA IS-891 for students in the process of obtaining their Certified Emergency Manager (CEM) certification, FEMA PDS (Professional Development Series) certificate, as well as state emergency management certifications. Additionally, ADJ faculty approval may be obtained for selected ADJ 195 or ADJ 298 courses related to homeland security.
- <sup>5</sup> Some instructors may incorporate FEMA IS-230.b, FEMA IS-700,



and FEMA IS-800 for students in the process of obtaining their Certified Emergency Manager (CEM) certification, FEMA PDS (Professional Development Series) certificate, as well as state emergency management certifications.

## Administration of Justice

### Certificate

Offered through AN, MA, WO, ELI

**Purpose:** This curriculum is designed for those students who wish to take only those courses that relate directly to the law enforcement field. The occupational objectives are to provide a basic foundation for individuals entering some particular area of the criminal justice field that does not require an A.A.S. or higher degree in criminal justice, or for persons already in the criminal justice field who wish to extend their knowledge/skill, or for those exploring the criminal justice field as a career alternative. Courses taken in the certificate program can be applied to the A.A.S. degree.

**Special Curriculum Admission Requirements:** Students are advised that many criminal justice and private/government security agencies require excellent moral character and a written record of conduct prior to consideration for employment.

One Year		Credits
<b>1st Semester</b>		
ADJ	100 Survey of Criminal Justice	3
ADJ	211 Criminal Law, Evidence, and Procedures I	3
ADJ	Elective	3
ENG	111 College Composition I	3
<sup>1</sup> ___	Social Science Elective	3
SDV	100 College Success Skills or SDV 101: Orientation section related to this program	1
<b>Total</b>		<b>16</b>
<b>2nd Semester</b>		
ADJ	105 The Juvenile Justice System	3
ADJ	133 Ethics and the Criminal Justice Professional	3
ADJ	212 Criminal Law, Evidence, and Procedures II	3
ADJ	Elective	3
<sup>2</sup> ITE	115 Intro. to Computer Applications and Concepts	3
<sup>1</sup> ___	Social Science Elective	3
<b>Total</b>		<b>18</b>

**Total credits for the Administration of Justice Certificate = 34**

- <sup>1</sup> See social/behavioral science courses listed under General Education Electives. PSY 200 or SOC 200 are recommended.
- <sup>2</sup> May substitute IT elective approved by student's academic advisor.

## Administration of Justice: General Forensic Investigation

### Career Studies Certificate

Offered through AN, MA, WO

**Purpose:** This curriculum is designed to provide an introduction to the forensic investigation aspect of law enforcement and investigation. It provides an overview of forensic evidence, investigation methods, and procedures suitable for persons exploring the

field as a career option or in need of training for promotion. The curriculum can be applied toward program electives in the Associate of Applied Science in Administration of Justice.

One Year		Credits
<b>1st Semester</b>		
ADJ	171 Forensic Science I	4
ENG	111 College Composition I	3
MTH	154 Quantitative Reasoning	3
<b>Total</b>		<b>10</b>
<b>2nd Semester</b>		
ADJ	212 Criminal Law, Evidence, and Procedures II	3
<sup>1</sup> ADJ	275 Forensic Pathology or ADJ 298 Homicide Seminar or BIO 101 General Biology I or CHM 101 Introductory Chemistry I	3-4
<sup>3</sup> ADJ	Forensic Elective	3
<b>Total</b>		<b>9-10</b>

**Total credits for the General Forensic Investigation Career Studies Certificate = 19-20**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17-24 must complete an SDV course within their first year at NOVA.

- <sup>1</sup> Course should be selected according to desired forensic specialty or emphasis.
- <sup>2</sup> Homicide Seminar must be three-credit option.
- <sup>3</sup> Approved forensic elective courses include the following: ADJ 127, ADJ 157, ADJ 164, ADJ 186, ADJ 236, ADJ 237.

## Administration of Justice: Advanced Forensic Investigation

### Career Studies Certificate

Offered through AN, MA, WO

**Purpose:** This curriculum is designed as an advanced program in forensic investigation intended to provide training beyond the General Forensic Career Studies Certificate, or to provide continuing training for private investigators, individuals in law enforcement, or persons licensed in various security and/or investigative-related areas.

**Admission Requirement:** Successful completion of the General Forensic Career Studies Certificate or approval from the program director.

One Year		Credits
<b>1st Semester</b>		
ADJ	172 Forensic Science II	4
<sup>1</sup> ___	Forensic Elective	3-4
<sup>1</sup> ___	Forensic Elective	3-4
ENG	111 College Composition I or CST 110 Intro. to Communication	3
<b>Total</b>		<b>13-15</b>

2nd Semester		
2	ADJ Elective	3
2	ADJ Elective	3
1	Forensic Elective	3-4
<b>Total</b>		<b>9-10</b>

**Total credits for the Advanced Forensic Investigation Career Studies Certificate = 22-25**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

- <sup>1</sup> May be ADJ forensic elective, BIO, or CHM. ADJ forensic electives are the following: ADJ 118, ADJ 127, ADJ 134, ADJ 157, ADJ 164, ADJ 165, ADJ 173, ADJ 174, ADJ 175, ADJ 176, ADJ 186, ADJ 226, ADJ 235, ADJ 236, ADJ 237, ADJ 276, ADJ 278, as well as ADJ faculty-approved ADJ 195 Topics or ADJ 295 Seminar courses.
- <sup>2</sup> Choose any ADJ course.

### Administration of Justice: National Security Career Studies Certificate

**Offered through AN, MA, WO**

**Purpose:** This program is designed for students interested in a career in national security or furthering a career that requires knowledge of national security issues. Upon successful completion of the program, students will understand the contemporary local, national, and global security issues, operations, and investigations affecting the United States. Students will study the hostile behaviors and activities directed against the United States from various ethnic, cultural, organizational, age, institutional, and social aspects. Graduates will be able to identify the threats facing the United States and describe the various options available to U.S. government agencies to thwart or neutralize these hostile activities. It must be noted that students completing this program must still pass a lengthy background investigation in order to obtain a security clearance required for employment in national security organizations. This program also is designed to meet the needs of employers in public and private industry, as well as the 18 federal agencies that comprise the intelligence community.

One Year			Credits
<b>1st Semester</b>			
	ADJ	133 Ethics and the Criminal Justice Professional	3
	ADJ	163 Crime Analysis and Intelligence	3
	ENG	111 College Composition I	3
<sup>1</sup>	SDV	100 College Success Skills	1
<b>Total</b>			<b>10</b>
<b>2nd Semester</b>			
	ADJ	234 Terrorism and Counter-Terrorism	3
	ADJ	250 Global Security Concepts for Law Enforcement and National Security	3
	ADJ	252 Counterintelligence Concepts for Law Enforcement and National Security	3
<b>Total</b>			<b>9</b>

**Total credits for the National Security Career Studies Certificate = 19**

- <sup>1</sup> Students may substitute the SDV 101 Orientation section related to this program.

### Administration of Justice: Security Management Career Studies Certificate

**Offered through AN, MA, WO**

**Purpose:** This curriculum is intended to meet the educational needs of security personnel who seek formal education and training in physical security and industrial security methods and techniques; experienced practitioners who wish to extend and expand their knowledge and skills; and persons exploring the security field as a career alternative. This certificate is applicable toward the two-year Associate of Applied Science in Administration of Justice.

One Year			Credits
<b>1st Semester</b>			
	ADJ	255 Security Management	3
<sup>1</sup>	ADJ	Elective	3
<sup>2</sup>	ENG	111 or CST Elective	3
<b>Total</b>			<b>9</b>
<b>2nd Semester</b>			
	ADJ	159 Physical Security	3
	ADJ	256 Information Security or ADJ 157 Computer Security	3
<sup>3</sup>	---	General Elective	1-3
<b>Total</b>			<b>7-9</b>

**Total credits for the Security Management Career Studies Certificate = 16-18**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

- <sup>1</sup> Select one from the following: ADJ 150, ADJ 228, or ADJ 234.
- <sup>2</sup> CST elective may be met by CST 100, CST 110, CST 126, or CST 229.
- <sup>3</sup> Elective must be chosen with advisor approval.

### Air Conditioning and Refrigeration Associate of Applied Science Degree

**Offered through WO**

**Purpose:** This curriculum is designed to prepare students for jobs in the air conditioning and refrigeration field. The second year provides students with skills that lead to leadership positions in the HVACR industry. Occupational objectives include industry licensing, advanced critical thinking skills, and state tradesman licenses in HVACR.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning and will be evaluated on a case-by-case basis by the program head.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Special Accreditation Status:** The Air Conditioning and Refrigeration Associate of Applied Science is accredited by HVAC Excellence (Benchmark of Academic Excellence). The date of the last review was 2010.

Two Years		Credits
<b>1st Semester</b>		
AIR	111 Air Conditioning and Refrigeration Controls I	3
AIR	121 Air Conditioning and Refrigeration I	4
ENG	111 College Composition I	3
<sup>1</sup> ___	Humanities/Fine Arts Elective	3
PHY	101 Intro. to Physics or MTH 111 Basic Technical Mathematics	3-4
SDV	100 College Success Skills	1
<b>Total</b>		<b>17-18</b>

<b>2nd Semester</b>		
AIR	122 Air Conditioning and Refrigeration II	4
AIR	134 Circuits and Controls	3
AIR	154 Heating Systems I	4
AIR	257 Gas-Fired Warm Air Furnaces	4
PED	116 Lifetime Fitness and Wellness	1
<b>Total</b>		<b>16</b>

<b>3rd Semester</b>		
AIR	205 Hydronics and Zoning	4
AIR	213 Air Conditioning and Refrigeration Controls III	4
AIR	251 Air Conditioning Systems I	4
CST	110 Intro. to Communication	3
<sup>2</sup> ___	Social Science Elective	3
<b>Total</b>		<b>18</b>

<b>4th Semester</b>		
AIR	207 Heat Loads and Psychrometrics	4
AIR	235 Heat Pumps	4
AIR	238 Advanced Troubleshooting and Service	4
AIR	252 Air Conditioning Systems II	4
<b>Total</b>		<b>16</b>

**Total credits for the A.A.S. Degree in Air Conditioning and Refrigeration = 67-68**

- <sup>1</sup> See humanities/fine arts courses listed under General Education Electives.  
<sup>2</sup> See social/behavioral science courses listed under General Education Electives.

## Air Conditioning and Refrigeration Certificate

Offered through W0

**Purpose:** This program is intended to prepare students for jobs in the air conditioning and refrigeration field. Upon successful completion of

the program, the student is prepared for full-time employment. The occupational objectives include service, maintenance, repair, and installation of air conditioning and refrigeration equipment.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning and will be evaluated on a case-by-case basis by the program head.

One Year		Credits
<b>1st Semester</b>		
AIR	111 Air Conditioning and Refrigeration Controls I	3
AIR	121 Air Conditioning and Refrigeration I	4
AIR	154 Heating Systems I	4
ENG	111 College Composition I	3
SDV	100 College Success Skills	1
<b>Total</b>		<b>15</b>
<b>2nd Semester</b>		
AIR	122 Air Conditioning and Refrigeration II	4
AIR	134 Circuits and Controls	3
AIR	213 Air Conditioning and Refrigeration Controls III	4
PHY	101 Intro. to Physics or MTH 111 Basic Technical Mathematics	3-4
<sup>1</sup> ___	Social Science Elective	3
<b>Total</b>		<b>17-18</b>

**Total credits for the Air Conditioning and Refrigeration Certificate = 32-33**

- <sup>1</sup> See social/behavioral science courses listed under General Education Electives.

## Air Conditioning and Refrigeration: HVAC-R and Facilities Services Technology Career Studies Certificate

Offered through W0

**Purpose:** This program is designed to prepare the student for entry-level positions in the air conditioning, refrigeration and facilities maintenance industry. Students receive entry-level instruction in the principles, service, maintenance, repair, and installation of air conditioning, refrigeration, heating, plumbing, and electrical systems.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning and will be evaluated on a case-by-case basis by the program head.

One Year		Credits
<b>1st Semester</b>		
AIR	111 Air Conditioning and Refrigeration Controls I	3
AIR	121 Air Conditioning and Refrigeration I	4
<sup>1</sup> AIR	154 Heating Systems I or BLD 20 Intro. to Plumbing	2-4
SDV	106 Preparation for Employment or SDV 100 College Success Skills	1
<b>Total</b>		<b>10-12</b>

2nd Semester		
AIR	122 Air Conditioning and Refrigeration II	4
AIR	134 Circuits and Controls	3
<sup>2</sup> ENG	111 or CST Elective	3
<b>Total</b>		<b>10</b>

**Total credits for the HVAC-R and Facilities Services Technology Career Studies Certificate = 20-22**

- Students who plan to work in the air conditioning and refrigeration industry or who plan to complete the Air Conditioning and Refrigeration Certificate or A.A.S. should take AIR 154, while students who plan to work in facilities maintenance should take BLD 20. See an advisor for details.
- CST Elective may be met by CST 100, CST 110, CST 126, or CST 129.

## American Sign Language to English Interpretation

Associate of Applied Science Degree

Offered through AN

**Purpose:** Designed for students who have limited, if any, previous experience with interpreting for Deaf people, this degree program provides the comprehensive training in theory and practical interpreting skills necessary for employment as an educational or community interpreter. Successful completion of this program prepares the student to pursue either a Virginia Quality Assurance Screening Level, national certification through the Registry of Interpreters for the Deaf, or a level on the Educational Interpreter's Performance Assessment. These credentials qualify the student to interpret in either educational or community settings.

**Admission Requirements:** The prerequisite for admission to the program is fluency in both English and American Sign Language. This is demonstrated by placement into ENG 111 and completion of the ASL Career Studies Certificate with a grade of "C" or better.

Two Years		Credits
<b>1st Semester</b>		
ASL	261 American Sign Language V	3
ENG	111 College Composition I	3
INT	105 Interpreting Foundations I	3
INT	142 Discourse Analysis	3
<sup>1</sup> SDV	100 College Success Skills	1
<b>Total</b>		<b>13</b>
<b>2nd Semester</b>		
ASL	262 American Sign Language VI	3
CST	110 Intro. to Communication	3
<sup>2</sup> ___	Humanities/Fine Arts Elective	3
INT	106 Interpreting Foundations II	3
INT	107 Translation Skills	3
<b>Total</b>		<b>15</b>
<b>3rd Semester (summer)</b>		
INT	141 Transliterating I	3
<sup>3</sup> PED	116 Lifetime Fitness and Wellness	1
<b>Total</b>		<b>4</b>

4th Semester		
INT	130 Interpreting: An Intro. to the Profession	3
INT	133 ASL-to-English Interpretation I	3
INT	134 English-to-ASL Interpretation I	3
<sup>4</sup> ___	Math Elective or Science Elective	3-4
<b>Total</b>		<b>12-13</b>

5th Semester		
INT	233 ASL-to-English Interpretation II	3
INT	234 English-to-ASL Interpretation II	3
INT	237 Interpreting in Safe Settings	2
<sup>5</sup> INT/ASL	INT/ASL Elective	3
<sup>3</sup> PED/RPK	Elective	1
<sup>6</sup> ___	Social Science Elective	3
<b>Total</b>		<b>15</b>

6th Semester (summer)		
INT	250 Dialogic Interpretation I	3
INT	290 Coordinated Internship	3
<b>Total</b>		<b>6</b>

**Total credits for the American Sign Language to English Interpretation A.A.S. Degree = 65-66**

- May substitute the SDV 101 Orientation section related to this program.
- See humanities/fine arts courses listed under General Education Electives.
- The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 116, 1 cr. plus a PED activities course, 1 cr.; or PED 116, 1 cr. plus RPK activities course. PED 116 is offered as both a 1-credit and a 2-credit course.
- May choose MTH 154 or higher or the science elective may be selected from biology, chemistry, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- Approved electives may be selected from INT 235, INT 236, ASL 208, and ASL 210.
- Elective must be approved. See social/behavioral science courses listed under General Education Electives. Students should base selection on requirements of transfer institution.

## American Sign Language (ASL) Career Studies Certificate

Offered through AN

**Purpose:** This program prepares students to communicate proficiently in American Sign Language, including both expressive and receptive skills. The ASL Career Studies Certificate will improve the students' marketability in a wide range of positions where it is necessary to possess effective communication between hearing and Deaf persons. These fields include careers such as teaching, health and social service occupations, and public safety positions. Many people already holding positions in these areas would enhance their ability to perform their current jobs by expanding the range of people with whom they can communicate. The ASL Career Studies Certificate also fulfills all of the prerequisite requirements for our other programs of study. Many students complete the ASL CSC and then go on to enroll in either the Interpreting A.A.S. or Deaf Studies A.S. curriculum.

**Admission Requirements:** Successful completion of ASL 101 American Sign Language I or consent of



instructor based on demonstrably equivalent skill level.

One Year		Credits
<b>1st Semester</b>		
ASL	100 Orientation of ASL as an Adult	2
ASL	101 American Sign Language I	4
<b>Total</b>		<b>6</b>
<b>2nd Semester</b>		
ASL	102 American Sign Language II	4
ASL	125 History and Culture of the Deaf Community	3
<sup>1</sup> SDV	100 College Success Skills	1
<b>Total</b>		<b>8</b>
<b>3rd Semester</b>		
ASL	115 Fingerspelling and Number Use in ASL or ASL 212 Advanced Fingerspelling and Number Use in ASL	2
ASL	201 American Sign Language III	4
<b>Total</b>		<b>6</b>
<b>4th Semester</b>		
ASL	202 American Sign Language IV	4
ASL	220 Comparative Linguistics: ASL and English	3
<b>Total</b>		<b>7</b>

**Total credits for the American Sign Language (ASL) Career Studies Certificate = 27**

<sup>1</sup> Students may substitute the SDV 101 Orientation section related to this program.

## Architecture Technology

Associate of Applied Science Degree

Offered through AL, AN

**Purpose:** This curriculum is designed to prepare students for employment. Students must see their Architecture Technology advisor to satisfy individual goals. The graduates may find employment in the field of architecture, construction, and urban design utilizing their construction knowledge, graphic communication, and problem solving skills.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Recommended Preparation:** Two years of high school algebra and geometry.

Two Years		Credits
<b>1st Semester</b>		
ARC	123 Architectural Graphics I	3
ARC	133 Construction Methodology and Procedures I	3
ARC	200 History of Architecture	4
CAD	201 Computer Aided Drafting and Design I	4
ENG	111 College Composition I	3
<sup>1</sup> SDV	100 College Success Skills	1
<b>Total</b>		<b>18</b>

2nd Semester		Credits
ARC	124 Architectural Graphics II	3
ARC	134 Construction Methodology and Procedures II	3
ARC	138 Structures for Architects	3
<sup>2</sup> ARC	298 Seminar and Project or ARC Technical Elective	2-3
<sup>3</sup> MTH	161 PreCalculus I	3
<b>Total</b>		<b>14-15</b>

3rd Semester		Credits
ARC	225 Site Planning	3
ARC	231 Architectural Design and Graphics I	4
ARC	243 Environmental Systems	4
CAD	202 Computer Aided Drafting and Design II	4
<sup>4</sup> —	Social Science Elective	3
<b>Total</b>		<b>18</b>

4th Semester		Credits
CAD	203 Computer Aided Drafting and Design III	3
ARC	232 Architectural Design and Graphics II	4
ARC	240 Designing Sustainable Built Environments or Technical Elective	3
<sup>5</sup> CST	Elective	3
<sup>6</sup> —	Humanities/Fine Arts Elective	3
<sup>7</sup> PED	116 Lifetime Fitness and Wellness	1
<b>Total</b>		<b>17</b>

**Total credits for the A.A.S. Degree in Architecture Technology = 67-68**

Colleges and universities offering the Bachelor of Science in Architecture and Master of Architecture may accept NOVA graduates as transfer students. See ARC faculty for details.

- <sup>1</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>2</sup> ARC 298 is recommended for the students who are planning to transfer to four-year colleges.
- <sup>3</sup> MTH 167 (5 cr.) is recommended for students who wish to transfer.
- <sup>4</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>5</sup> Courses may be selected from ARC, BLD, and CAD.
- <sup>6</sup> Select from the following: CST 100, CST 110, CST 126, or CST 229.
- <sup>7</sup> See humanities/fine arts courses listed under General Education Electives.

## Architectural Drafting

Certificate

Offered through AL, AN

**Purpose:** This program is designed to prepare the student for entry-level employment in an architectural firm or a construction office. The student who completes the certificate may continue study toward the A.A.S. in Architecture Technology. Job opportunities include architectural draftsman and engineering aide.

**Recommended Preparation:** Two years of high school algebra and geometry.

One Year		Credits
<b>1st Semester</b>		
ARC	123 Architectural Graphics I	3
ARC	133 Construction Methodology and Procedures I	3
CAD	201 Computer Aided Drafting and Design I	4
ENG	111 College Composition I	3
<sup>1</sup> SDV	100 College Success Skills	1
<b>Total</b>		<b>14</b>
<b>2nd Semester</b>		
ARC	124 Architectural Graphics II	3
ARC	134 Construction Methodology and Procedures II	3
ARC	240 Designing Sustainable Built Environments or	
<sup>2</sup>	Technical Elective	3
CAD	202 Computer Aided Drafting and Design II	4
<sup>3</sup> MTH	161 PreCalculus I	3
<b>Total</b>		<b>16</b>

**Total credits for the Architectural Drafting Certificate = 30**

- <sup>1</sup> Students may substitute the SDV 101 Orientation section related to this program.
- <sup>2</sup> Courses may be selected from ARC, BLD, and CAD.
- <sup>3</sup> MTH 167 (5 cr.) is recommended for students who wish to transfer.

## Automotive Technology

### Associate of Applied Science Degree

Offered through AL, MA

**Purpose:** This curriculum is designed to train technicians for the automotive field. Students completing this program will be ready for full-time employment as automotive technicians. Job opportunities include line technician, new car make-ready, and customer service representative.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Two Years		Credits
<b>1st Semester</b>		
AUT	100 Intro. to Automotive Shop Practices	2
AUT	111 Automotive Engines I	4
<sup>1</sup> AUT	241 Automotive Electricity I	4
ENG	111 College Composition I or	
	ENG 131 Technical Report Writing I	3
SDV	100 College Success Skills or SDV 101	1
<b>Total</b>		<b>14</b>
<b>2nd Semester</b>		
AUT	242 Automotive Electricity II	4
AUT	265 Automotive Braking Systems	4
AUT	266 Auto Alignment, Suspension, and Steering	4
PHY	130 Survey of Applied Physics or	
	PHY 101 Intro. to Physics I or	
	MTH 111 Basic Technical Math	3-4
<b>Total</b>		<b>15-16</b>

3rd Semester		Credits
AUT	121 Automotive Fuel Systems I	4
AUT	236 Automotive Climate Control	4
<b>Total</b>		<b>8</b>
<b>4th Semester</b>		
AUT	112 Automotive Engines II	4
AUT	122 Automotive Fuel Systems II	4
AUT	141 Automotive Power Trains I	4
<sup>2</sup> —	Humanities/Fine Arts Elective	3
<b>Total</b>		<b>15</b>
<b>5th Semester</b>		
AUT	142 Automotive Power Trains II	4
<sup>3</sup> AUT	245 Automotive Electronics	4
CST	110 Intro. to Communication	3
<sup>4</sup> —	Social Science Elective	3
<b>Total</b>		<b>14</b>

**Total credits for the A.A.S. Degree in Automotive Technology = 66-67**

- <sup>1</sup> May substitute DSL 141 plus DSL 143. Both courses must be taken in order to make this substitution.
- <sup>2</sup> See humanities/fine arts courses listed under General Education Electives.
- <sup>3</sup> May substitute AUT 233.
- <sup>4</sup> See social/behavioral science courses listed under General Education Electives.

## Automotive Technology: Emissions Specialization

### Associate of Applied Science Degree

Offered through AL, MA

**Purpose:** This curriculum is designed to train technicians for the automotive field. Students completing this program will be ready for full-time employment as automotive technicians. Job opportunities include line technician, new car make-ready, and customer service representative.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

Two Years		Credits
<b>1st Semester</b>		
AUT	100 Intro. to Automotive Shop Practices	2
AUT	111 Automotive Engines I	4
AUT	121 Automotive Fuel Systems I	4
ENG	111 College Composition I or	
	ENG 131 Technical Report Writing I	3
PHY	130 Survey of Applied Physics or	
	PHY 101 Intro. to Physics I or	
	MTH 111 Basic Technical Math	3-4
SDV	100 College Success Skills or	
	SDV 101 section related to this program	1
<b>Total</b>		<b>17-18</b>
<b>2nd Semester</b>		
AUT	122 Automotive Fuel Systems II	4
AUT	215 Emissions Systems Diagnosis/Repair	2
<sup>1</sup> AUT	241 Automotive Electricity I	4
CST	110 Intro. to Communication	3
ITE	115 Intro. to Computer Applications and Concepts	3
<b>Total</b>		<b>16</b>
<b>3rd Semester</b>		
AUT	236 Automotive Climate Control	4
<b>Total</b>		<b>4</b>

4th Semester		
AUT	141 Automotive Power Trains I	4
AUT	242 Automotive Electricity II	4
AUT	265 Automotive Braking Systems	4
<sup>2</sup> ___	Social Science Elective	3
<b>Total</b>		<b>15</b>

5th Semester		
AUT	142 Automotive Power Trains II	4
AUT	226 Advanced ASM Emissions Diagnostics	2
AUT	266 Automotive Alignment, Suspension, and Steering	4
<sup>3</sup> ___	Humanities/Fine Arts Elective	3
<b>Total</b>		<b>13</b>

**Total credits for the A.A.S. Degree in Automotive Technology with a Specialization in Emissions = 65–66**

- <sup>1</sup> May substitute DSL 141 plus DSL 143. Both courses must be taken in order to make this substitution.
- <sup>2</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>3</sup> See humanities/fine arts courses listed under General Education Electives.

## Automotive Technology: Maintenance and Light Repair

Career Studies Certificate

Offered through AL, MA

**Purpose:** This program is designed to prepare students for entry-level employment as light repair technicians in new car dealerships and after-market service outlets.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year		Credits
1st Semester		
AUT	100 Intro. to Automotive Shop Practices	2
<sup>1</sup> AUT	241 Automotive Electricity I	4
AUT	265 Automotive Braking Systems	4
SDV	100 College Success Skills	1
<b>Total</b>		<b>11</b>

2nd Semester		
AUT	111 Automotive Engines I	4
AUT	285 Auto Service and Practical Application Capstone or AUT 266 Auto Alignment, Suspension and Steering	4
<b>Total</b>		<b>8</b>

**Total credits for the Automotive Maintenance and Light Repair Career Studies Certificate = 19**

First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

- <sup>1</sup> May substitute DSL 141 plus DSL 143. Both courses must be taken in order to make this substitution.

## Automotive Technology: Collision Repair Technology

Career Studies Certificate

Offered through AL

**Purpose:** This program prepares students for entry-level positions as collision repair technicians. The curriculum provides experience in evaluation, repair, and refinishing of automotive body damage.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

**Recommended Preparation:** It is important that the student talk with a counselor about selecting classes in the curriculum.

One Year		Credits
1st Semester		
AUB	106 Basic Sheet Metal Operations	4
AUB	118 Paint Preparation	4
AUT	100 Intro. to Automotive Shop Practices	2
<b>Total</b>		<b>10</b>
2nd Semester		
AUB	125 Automotive Body Welding	4
AUB	119 Automotive Painting	4
ENG	131 Technical Report Writing I or CST 110 Intro. to Communication	3
<b>Total</b>		<b>11</b>
3rd Semester		
AUB	116 Automotive Body Repair	4
<b>Total</b>		<b>4</b>

**Total credits for the Collision Repair Technology Career Studies Certificate = 25**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

## Automotive Technology: Diesel Mechanics Technology

Career Studies Certificate

Offered through MA

**Purpose:** This program is designed to introduce the fundamentals of diesel equipment repair and provide instruction in hydraulic systems, diesel engine overhaul and tune-up, electrical circuits, power train maintenance, and fuel injection. The curriculum provides practical training and the option of on-the-job experience through cooperative education. Graduates will have a background in basic diesel equipment technology principles. The program prepares graduates for employment in the following areas: diesel equipment repair, diesel truck repair, supervisor, shop foreman, heavy duty repair, purchasing agent, salesperson, power train repair,

fuel injection repair, diesel engine repair, automotive diesel repair, and marine diesel repair.

One Year		Credits
<b>1st Semester</b>		
DSL	111 Intro. to Diesel Engine	2
<sup>1</sup> DSL	141 Transportation Electrical Systems I	2
DSL	153 Power Trains I	3
DSL	155 Heavy Duty Suspension and Service	3
ENG	111 College Composition I or ENG 131 Technical Report Writing	3
<sup>2</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>14</b>
<b>2nd Semester</b>		
DSL	123 Diesel Engine Systems I	2
DSL	143 Diesel Truck Electrical Systems	4
DSL	150 Mobile Hydraulics and Pneumatics	3
DSL	160 Air Brake Systems	3
WEL	120 Intro. to Welding	2
	<b>Total</b>	<b>14</b>

**Total credits for the Diesel Mechanics Technology Career Studies Certificate = 28**

<sup>1</sup> May substitute AUT 241.

<sup>2</sup> May substitute the SDV 101 Orientation section related to this program.

## Biotechnology

Associate of Applied Science Degree

Offered through LO, MA

**Purpose:** This program is designed to prepare graduates for employment in entry-level positions at biotechnology and pharmaceutical companies as laboratory, research, or manufacturing technicians. Coursework will develop an understanding of basic scientific principles in biology and chemistry, and will emphasize laboratory techniques and procedures such as solution and media preparation, DNA purification and analysis, electrophoresis, chromatography, maintenance of cells in culture, and quality control techniques.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Many of the courses within the program are accepted for transfer to almost any senior institution. Students interested in transfer should contact their academic advisor early in their program.

**Application Process:** Individuals wishing to enroll in the A.A.S. in Biotechnology should follow these steps for admission, starting at least one semester prior to when they wish to enroll in the program:

- Attend an information session or schedule an advising appointment with a Biotechnology academic advisor.
  - This can be completed prior to or after steps 2–4. Students are encouraged to seek information very early in the process.

- Apply to NOVA.
  - Students may choose to enroll in the A.S. in General Studies prior to their acceptance into the program.

- Take the College placement test for English and Mathematics in one of the College's Testing Centers (located on each campus).

- Complete pre-admission requirements for the program. Students applying to the A.A.S. program must have documentation of the following:
  - placement into college-level English (ENG 111),
  - placement into MTH 161 or higher, and
  - completion of BIO 101 with a "C" or better.

Students who are currently enrolled in BIO 101 may apply to the program and be admitted on a provisional basis after meeting with and if recommended by a biotechnology faculty advisor until their final grade is submitted. If a student has taken BIO 101 or any of the course requirements at another institution, he/she must submit official transcripts and if applicable, foreign transcripts, and submit a formal evaluation of the courses/degree, along with a Request for Evaluation of Transcripts Form (125–049), for each institution.

- Apply to the program. Applicants need to complete an application online. This will automatically be e-mailed to the Biotechnology Program coordinator. S/he will review the applicant's application, test scores, and transcripts to confirm he/she is eligible for admission. An advising session will be scheduled if not already completed. Applicants will be notified within 2–4 weeks as to whether they have been accepted. Once a student is accepted a counselor or faculty advisor will program place the student in the program.
- Receive the *Biotechnology Program Handbook* and register for core biotechnology classes, BIO 250 and BIO 253.

Two Years		Credits
<b>1st Semester</b>		
<sup>1</sup> BIO	101 General Biology	4
ENG	111 College Composition I	3
MTH	161 Precalculus I	3
SDV	100 College Success Skills or SDV 101 Orientation to Biotechnology	1
<sup>2</sup> —	Social Science Elective	3
	<b>Total</b>	<b>14</b>
<b>2nd Semester</b>		
<sup>3</sup> —	Biotechnology/Science Elective	4
CHM	111 General Chemistry I	4
<sup>4</sup> ENG	112 College Composition II or ENG 125 Introduction to Literature	3
<sup>5</sup> —	Humanities/Fine Arts Elective	3
	<b>Total</b>	<b>14</b>



3rd Semester		
CHM	112 General Chemistry II	4
<sup>6</sup> CST	Elective	3
	<b>Total</b>	<b>7</b>
4th Semester		
BIO	147 Basic Laboratory Calculation for Biotechnology	1
BIO	165 Principles in Regulatory and Quality Environments for Biotechnology	2
BIO	205 General Microbiology	4
BIO	250 Biotechnology Research Methods and Skills	3
BIO	253 Biotechnology Concepts	3
	<b>Total</b>	<b>13</b>
5th Semester		
BIO	180 Intro. to Careers in Biotechnology	1
BIO	206 Cell Biology	4
BIO	251 Protein Applications for Biotechnology or BIO 252 Nucleic Acid Methods	4
BIO	254 Capstone Seminar in Biotechnology	2
BIO	255 Bioinformatics and Computer Applications for Biotechnology	2
	<b>Total</b>	<b>13</b>
6th Semester		
<sup>7</sup> BIO	296 On-site training in Biotechnology	3
	<b>Total</b>	<b>3</b>

**Total credits for the A.A.S. Degree in Biotechnology = 64**

- Must complete with a "C" or better.
- See social/behavioral science courses listed under General Education Electives.
- Biotechnology elective in the science category may be selected from the following 4-credit courses: BIO 102, BIO 251, BIO 252, and BIO 256. Consult with your advisor for transfer options.
- Students who plan to transfer to a university may wish to consider taking ENG 112. ENG 125 is a preferred course if transferring to Mason.
- See humanities/fine arts courses listed under General Education Electives. For ART 101, please check with your advisor for transferability.
- Select from the following: CST 100, CST 110, CST 126 or CST 229.
- Students must be approved by the Biotechnology program coordinator(s) for an internship. Criteria for approval include successful completion of biotechnology courses (including a demonstrated proficiency of basic lab skills), a professional work ethic, and an ability to work well with others. Please see a Biotechnology academic advisor for assistance in determining and placement or for approval of a topic for a Project or Supervised Study.

## Biotechnology Lab Technician Career Studies Certificate

Offered through LO, MA

**Purpose:** This program is designed for persons wishing to enhance their employment options or retrain for a career as a laboratory technician in various biotechnology disciplines. Students interested in this certificate may include career changers who already have a bachelor's degree, scientists who were trained in foreign countries who need updated training, current A.S. in Science students who want to obtain a core of biotechnology courses and/or find a job in local industry while they complete their undergraduate degrees, and high school teachers who wish to refine their own biotechnology skills and obtain the required retraining necessary for continued teacher certification.

**Application Process:** Students applying to the Biotechnology Lab Technician Career Studies Certificate must complete all of the pre-admission requirements as outlined for the A.A.S. in Biotechnology with the exception that applications will only be accepted for students enrolling in the Fall Semester (August 1). In addition, a student must have completed a college degree (associate of science or higher). Foreign students must document the U.S. equivalent to an associate degree. Students without a science degree are strongly advised to complete the A.A.S. in Biotechnology instead of the career studies certificate. To apply to the program, please go to [www.nvcc.edu/manassas/biotech](http://www.nvcc.edu/manassas/biotech).

**Prerequisites:** Because jobs in biotechnology generally require at least an associate degree, in a science field, students must already have a 2-year or 4-year college degree, be enrolled in the A.S. in Science, or obtain permission from the Biotechnology program coordinator in order to be placed into this program. BIO 101 General Biology I is a prerequisite of all of the biotechnology courses in this program.

Students who have degrees in non-science fields are strongly encouraged to complete the A.A.S. in Biotechnology.

One Year		Credits
1st Semester		
BIO	147 Basic Laboratory Calculations for Biotechnology	1
BIO	165 Principles in Regulatory and Quality Environments for Biotechnology	2
BIO	250 Biotechnology Research Methods and Skills	3
BIO	253 Biotechnology Concepts	3
<sup>1</sup> ENG/CST	Elective	3
	<b>Total</b>	<b>12</b>
2nd Semester		
BIO	180 Intro. to Careers in Biotechnology	1
BIO	251 Protein Applications in Biotechnology or BIO 252 Nucleic Acid Methods	4
BIO	254 Capstone Seminar in Biotechnology	2
BIO	255 Bioinformatics and Computer Applications for Biotechnology	3
	<b>Total</b>	<b>9</b>
3rd Semester		
<sup>2</sup> BIO	296 On-site training in Biotechnology (Biotechnology Internship)	3
	<b>Total</b>	<b>3</b>

**Total credits for the Biotechnology Lab Technician Career Studies Certificate = 24**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

- <sup>1</sup> Choose from the following courses: CST 100, CST 110, CST 126, CST 229, ENG 111, ENG 115, ENG 131.
- <sup>2</sup> Students must be approved by the Biotechnology program coordinator(s) for an internship. Criteria for approval include successful completion of biotechnology courses (including a demonstrated proficiency of basic lab skills), a professional work ethic, and an ability to work well with others. Please see a Biotechnology academic advisor for assistance in determining eligibility and placement or for approval of a topic for a Project Supervised Study.

## Bookkeeping Certificate

See Accounting

## Business Administration

Associate of Science Degree

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** This curriculum is designed for individuals who plan to transfer to a four-year college or university to complete a baccalaureate degree program in business administration with a major in accounting, business management, decision science and management, information systems, finance, marketing, etc.

**Transfer Information:** Since four-year colleges can vary in their course and GPA requirements for the business major, please consult a counselor or an academic advisor regarding specific requirements and course selection.

**Recommended Preparation:** Satisfactory completion of the following high school units or equivalent: 4 units of English; 2 units of mathematics (algebra and geometry); 1 unit of laboratory science; and 1 unit of social studies.

Two Years		Credits
<b>1st Semester</b>		
<sup>1</sup> CST	Elective	3
ENG	111 College Composition I	3
<sup>2</sup> HIS	Elective	3
ITE	115 Intro. to Computer Applications and Concepts	3
<sup>3</sup> MTH	161 Precalculus I	3
SDV	100 College Success Skills or SDV 101 section related to this program	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
BUS	100 Intro. to Business	3
<sup>4</sup> ENG	125 Intro. to Literature or ENG 112 English Composition II	3
<sup>3</sup> MTH	261 Applied Calculus I	3
<sup>5</sup> —	Humanities/Fine Arts Elective	3
<sup>6</sup> —	Physical or Life Science Elective w/Lab	4
	<b>Total</b>	<b>16</b>
<b>3rd Semester</b>		
ACC	211 Principles of Accounting I	3
<sup>7</sup> BUS	280 Intro. to International Business	3
ECO	201 Principles of Economics I	3
<sup>5</sup> —	Humanities/Fine Arts Elective	3
<sup>6</sup> —	Physical or Life Science Elective w/Lab	4
	<b>Total</b>	<b>16</b>

4th Semester		
ACC	212 Principles of Accounting II	3
ECO	202 Principles of Economics II	3
<sup>3</sup> BUS	224 Statistical Analysis for Business	4
<sup>8</sup> BUS	270 Interpersonal Dynamics in the Business Organization	3
	<b>Total</b>	<b>13</b>

**Total credits for the A.S. Degree in Business Administration = 61**

- <sup>1</sup> May be selected from the following: CST 100, CST 110, CST 126, or CST 229.
- <sup>2</sup> See HIS courses listed under the social/behavioral science courses under General Education Electives. HIS 101, HIS 102, or HIS 112 is a preferred course if transferring to Mason.
- <sup>3</sup> Students placing directly into MTH 261 may replace MTH 161 + BUS 224 with MTH 245 + ITE 140 + any 1-credit elective.
- <sup>4</sup> ENG 125 is a preferred course if transferring to Mason. Students considering transfer should consult an academic advisor.
- <sup>5</sup> See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution. Students with an interest in International Business should consider at least 3 credits of a 200 level language course.
- <sup>6</sup> Select from biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>7</sup> BUS 280 is a prerequisite for acceptance into the Mason School of Business and transfers as Mason's BUS 200. Students considering transfer, other than Mason, consult an academic advisor. Both Marymount University and JMU recommend BUS 241.
- <sup>8</sup> Students considering transfer to an institution other than Mason consult an academic advisor. Marymount University recommends BUS 242.

## Business Management

Associate of Applied Science Degree

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** The curriculum is designed for individuals who seek employment in business management or for those presently in management who are seeking promotion. Job opportunities include administrative assistant, management trainee, department head, branch manager, office manager, manager of small business, and supervisor.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Recommended Preparation:** The student should possess a proficiency in high school English and a strong background in basic arithmetic operations.

Two Years			Credits
<b>1st Semester</b>			
	BUS	100 Intro. to Business	3
	ENG	111 College Composition I	3
<sup>1</sup>	—	Humanities/Fine Arts Elective	3
<sup>2</sup>	MTH	154 Quantitative Reasoning	3
<sup>3</sup>	PED	116 Lifetime Fitness and Wellness	1
<sup>4</sup>	SDV	100 College Success Skills	1
	<b>Total</b>		<b>14</b>
<b>2nd Semester</b>			
<sup>5</sup>	BUS	125 Applied Business Mathematics	3
	BUS	200 Principles of Management	3
<sup>6</sup>	—	Business Elective	3
	ENG	112 College Composition II	3
	MKT	201 Intro. to Marketing	3
	<b>Total</b>		<b>15</b>
<b>3rd Semester</b>			
	ACC	211 Principles of Accounting I	3
<sup>6</sup>	—	Business Elective	3
<sup>6</sup>	—	Business Elective	3
	BUS	241 Business Law I	3
<sup>7</sup>	CST	Elective	3
<sup>8</sup>	ECO	120 Survey of Economics	3
	<b>Total</b>		<b>18</b>
<b>4th Semester</b>			
	ACC	212 Principles of Accounting II	3
<sup>6</sup>	—	Business Elective	3
<sup>9</sup>	BUS	220 Intro. to Business Statistics	3
	BUS	226 Computer Business Applications	3
	BUS	242 Business Law II	3
	FIN	215 Financial Management	3
<sup>3</sup>	—	PED/RPK Elective	1
	<b>Total</b>		<b>19</b>

**Total credits for the A.A.S. Degree in Business Management = 66**

Check course descriptions in this *Catalog* for requirements regarding placement tests and/or prerequisites.

- <sup>1</sup> See humanities/fine arts courses listed under General Education Electives.
- <sup>2</sup> May substitute a higher-level mathematics course. If considering transfer, consult an academic advisor for appropriate selection.
- <sup>3</sup> The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 116, 1 cr. plus a PED activities course, 1 cr.; or PED 116, 1 cr. plus RPK activities course. PED 116 is offered as both a 1-credit and a 2-credit course.
- <sup>4</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>5</sup> Students considering transfer should consult an academic advisor.
- <sup>6</sup> May be selected from ACC, BUS, CON, ECO, FIN, HRI, IT, MKT, or REA. Students considering transfer should consult an academic advisor for appropriate choices.
- <sup>7</sup> May be selected from the following: CST 100, CST 110, CST 126, or CST 229.
- <sup>8</sup> Students considering transfer may take ECO 201 or ECO 202 after consulting an academic advisor.
- <sup>9</sup> BUS 224 is recommended for those who qualify and want to transfer.

## Business Management: Business Information Technology

### Career Studies Certificate

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** The curriculum is designed to teach the student the basics of business information technology and the first award for persons who

intend to pursue certificate and/or associate degree programs in business-related fields. The courses in this career studies program provide foundations in basic business practices that can be applied to a variety of certificate and degree programs.

One Semester			Credits
	BUS	100 Intro. to Business or BUS 204 Project Management	3
	—	BUS or IT Elective	3
<sup>1</sup>	ENG/CST	Elective	3
<sup>2</sup>	ITE	115 Intro. to Computer Applications and Concepts	3
<sup>3</sup>	—	Social Science Elective or BUS 201 Organizational Behavior	3
	SDV	100 College Success Skills	1
	<b>Total</b>		<b>16</b>

**Total credits for the Business Information Technology Career Studies Certificate = 16**

- <sup>1</sup> The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by the student's advisor, or by CST 100, CST 110, CST 126, or CST 229.
- <sup>2</sup> May substitute BUS 226.
- <sup>3</sup> See social/behavioral science courses listed under General Education Electives.

## Business Management: Entrepreneurship

### Career Studies Certificate

Offered through AL

**Purpose:** This program is designed to prepare students to start and grow a successful small business by providing instruction in entrepreneurial culture, strategy, operations, financial management, marketing, and leadership.

**Recommended Preparation:** The student should possess a proficiency in high school English, strong background in basic arithmetic operations and basic computer/software skills.

**Special Admission Requirement:** This program is open only to students in selected groups as approved by the dean of the Science, Technology, and Business Division at the Alexandria Campus.

One Year			Credits
<b>1st Semester</b>			
<sup>1</sup>	ACC	220 Accounting for Small Business or ACC 211 Principles of Accounting I	3
	BUS	116 Entrepreneurship	3
	BUS	165 Small Business Management	3
	BUS	200 Principles of Management	3
<sup>2</sup>	SDV	100 College Success Skills	1
	<b>Total</b>		<b>13</b>
<b>2nd Semester</b>			
	BUS	241 Business Law I	3
	BUS	260 Planning for Small Business	3
	FIN	260 Financial Management for Small Business	2
	MKT	201 Intro. to Marketing	3
	<b>Total</b>		<b>11</b>

**Total credits for the Entrepreneurship Career Studies Certificate = 24**

- <sup>1</sup> ACC 211 is recommended for students who plan to transfer.  
<sup>2</sup> May substitute the SDV 101 Orientation section related to this program.

## Business Management: Leadership Development

### Career Studies Certificate

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** This program combines communication and human relations competencies with specialized business courses. It is designed for individuals who are currently, or hope to be, in leadership, human resource, or supervisory managerial positions in the private/not-for-profit sector or governmental organizations. The certificate is especially appropriate for individuals who have a degree related to their field of employment, but who lack training in team leadership or management skills. The program emphasizes practical application of leadership concepts and theories to prepare students for team leadership positions.

One Year		Credits
<b>1st Semester</b>		
<sup>1</sup> BUS	100 Intro. to Business or BUS 200 Principles of Management	3
<sup>1</sup> BUS	111 Principles of Supervision or BUS 201 Organizational Behavior	3
CST	227 Business and Professional Communication or ENG 116 Writing for Business	3
<b>Total</b>		<b>9</b>
<b>2nd Semester</b>		
BUS	117 Leadership Development or BUS 297 Cooperative Education	3
BUS	205 Human Resource Management	3
<sup>2</sup> SDV	100 College Success Skills	1
<b>Total</b>		<b>7</b>

**Total credits for the Leadership Development Career Studies Certificate = 16**

- <sup>1</sup> For students with minimal work experience, BUS 100 and BUS 111 are recommended. Consult an academic advisor to make the appropriate choices.  
<sup>2</sup> Students may substitute the SDV 101 Orientation section related to this program.

## Cinema

### Associate in Fine Arts

Offered through AL, WO

**Purpose:** This curriculum is designed for individuals who plan to transfer to a four-year college or university to complete a baccalaureate degree program in the Visual Arts with a major in cinema, film, or media production.

**Transfer Information:** Since four-year colleges can vary in their course and GPA requirements for the business major, please consult your Cinema, AFA Academic Advisor regarding specific requirements and course selection.

**Recommended Preparation:** Satisfactory completion of the following high school units or equivalent: 4 units of English; 2 units of mathematics (algebra and geometry); 1 unit of laboratory science; and 1 unit of social studies.

Two Years		Credits
<b>1st Semester</b>		
CSC	120 Screenwriting	3
CST	115 Small Group Communication or CST 126 Interpersonal Communication	3
CST	151 Film Appreciation I	3
ENG	111 College Composition I	3
SDV	101 Orientation to Fine Arts	1
<sup>1</sup> —	Social Science Elective	3
<b>Total</b>		<b>16</b>
<b>2nd Semester</b>		
ART	160 Film Production or PHT 130 Video Production I	3
CST	198 Seminar and Project: Portfolio	1
CST	250 The Art of Film	3
CST	270 Film Directing	3
<sup>2</sup> ENG	112 College Composition II or ENG 125 Introduction to Literature	3
<sup>3</sup> MTH	154 Quantitative Reasoning	3
<b>Total</b>		<b>16</b>
<b>3rd Semester</b>		
<sup>4</sup> ART	Elective	3
ART	161 Film Production II or PHT 131 Video Production II	3
CST	152 Film Appreciation II	3
<sup>5</sup> —	Physical or Life Science Elective w/Lab	4
PHT	274 Digital Film Editing and Post Production	3
<b>Total</b>		<b>16</b>
<b>4th Semester</b>		
<sup>6</sup> —	ART or CST Elective	3
<sup>2</sup> ENG	200-level Literature Elective	3
CST	140 Acting for the Camera or ART Elective	3
CST	290 Coordinated Internship	3
CST	298 Seminar and Project: Portfolio	3
<b>Total</b>		<b>15</b>

**Total credits for the Cinema A.F.A. = 63**

- <sup>1</sup> May choose Social/Behavioral Science Elective with Advisor approval from the following courses: 3 from this list—strongly recommended: ECO 201, ECO 202, GEO 200, GEO 210, GEO 220, HIS 101, HIS 102, HIS 112, HIS 121, HIS 122, PLS 120, PLS 135, PLS 211, PLS 241, PSY 200, PSY 230, SOC 200, SOC 211, or SOC 212.  
<sup>2</sup> Students planning to attend Mason should take ENG 125; most other students should take ENG 112. Check with the institution you plan to attend.  
<sup>3</sup> May substitute any higher-level mathematics course. See transfer institution requirements.  
<sup>4</sup> May choose ART Elective with Advisor approval for maximum transferability.  
<sup>5</sup> See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence. Select with Advisor approval for maximum transferability.  
<sup>6</sup> May choose ART or CST Elective with Advisor approval. Select from ART 140, ART 270, CST 110, CST 114, CST 140, or CST 245.  
<sup>7</sup> May choose ENG Literature Elective with Advisor approval for maximum transferability.  
<sup>8</sup> May choose ART Elective with Advisor approval for maximum transferability. Students wishing to enroll in ART 270: Motion Graphics I should enroll in ART 140: Introduction to Graphic Skills.



## Computer Science–Related Programs

See also Information Technology and Computer Science Associate of Science Degrees

### Computer Science

Associate of Science Degree

Offered through AL, AN, LO, MA, WO

**Purpose:** The curriculum is designed primarily for students who wish to transfer to a four-year college or university to complete a baccalaureate degree in computer science. The curriculum emphasizes the study of the science of computing and the use of computing in a scientific setting.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet the requirements of the transfer institution. The responsibility for proper course selection rests with the student.

**Recommended Preparation:** Satisfactory completion of the following high school units or equivalent: 4 units of English and 4 units of college preparatory mathematics.

Two Years		Credits
<b>1st Semester</b>		
<sup>1</sup> CSC	200 Intro. to Computer Science	4
CST	110 Intro. to Communication or CST 100 Principles of Public Speaking	3
ENG	111 College Composition I	3
<sup>2,3</sup> MTH	167 Precalculus with Trigonometry	5
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
CSC	201 Computer Science I	4
<sup>4</sup> ENG	125 Intro to Literature or ENG 112 English Composition II	3
<sup>5</sup> ___	Humanities/Fine Arts Elective	3
MTH	263 Calculus I	4
	<b>Total</b>	<b>14</b>
<b>3rd Semester</b>		
CSC	202 Computer Science II	4
MTH	264 Calculus II	4
<sup>6</sup> ___	Physical or Life Science Elective w/Lab	4
<sup>7</sup> ___	Social Science Elective	3
	<b>Total</b>	<b>15</b>
<b>4th Semester</b>		
<sup>8</sup> CSC	205 Computer Organization	3
___	Humanities/Fine Arts Elective	3
___	Physical or Life Science Elective w/Lab	4
<sup>7</sup> ___	Social Science Elective	3
<sup>7</sup> ___	Social Science Elective	3
	<b>Total</b>	<b>16</b>

**Total credits for the A.S. Degree in Computer Science = 61**

- <sup>1</sup> Students with prior programming experience or Advanced Placement credit should talk to a Computer Science academic advisor to determine the appropriate first course to take in the NOVA Computer Science course sequence. The credits not earned by bypassing the required course(s) must be replaced by taking advanced mathematics courses (MTH 266, MTH 288,

or MTH 265), or CSC 206, or EGR 265 in order to fulfill the minimum credit-hour requirements for the degree.

- <sup>2</sup> Students may substitute MTH 167 (5 credits) with MTH 161 (3 credits) and MTH 162 (3 credits).
- <sup>3</sup> Students placed into MTH 263 or MTH 264, should begin with that course. Students will not need to take the lower level mathematics classes if they place into a higher class. The credits not earned by passing the required course(s) must be replaced by taking advanced mathematics (MTH 265, MTH 266, or MTH 288), advanced computer science courses (CSC 206), or other computer science related courses (EGR 265) in order to fulfill the minimum credit-hour requirements for the degree.
- <sup>4</sup> ENG 125 is a preferred course if transferring to George Mason University. Students considering transfer should consult an academic advisor to select the appropriate course.
- <sup>5</sup> See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
- <sup>6</sup> See biology, chemistry (excluding CHM 101–102), ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>7</sup> See social/behavioral science courses listed under General Education Electives. All electives should be selected in conjunction with an advisor and after examining the requirements at the transfer institution.
- <sup>8</sup> May substitute with EGR 265 if planning to transfer to George Mason University. Please consult an academic advisor to select the appropriate course.

## Construction Management Technology

Associate of Applied Science Degree

Offered through AL

**Purpose:** The curriculum is designed to qualify personnel in both engineering technology and management for employment in all areas of a construction firm. Job opportunities include engineering aide, construction project manager, construction supervisor, estimator, and facilities planning and supervision.

Two Years		Credits
<b>1st Semester</b>		
BLD	101 Construction Management I	3
BLD	165 Construction Field Operations	2
BLD	231 Construction Estimating I	3
CIV	171 Surveying I	3
CAD	165 Architectural Blueprint Reading	3
ENG	111 College Composition I	3
<sup>1</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>18</b>
<b>2nd Semester</b>		
BLD	102 Construction Management II	3
BLD	215 OSHA 30 Construction Safety	2
BLD	232 Construction Estimating II	3
CAD	201 Computer Aided Drafting and Design I	4
<sup>2</sup> ___	Humanities/Fine Arts Elective	3
<sup>3</sup> MTH	161 Precalculus I	3
	<b>Total</b>	<b>18</b>
<b>3rd Semester</b>		
ARC	133 Construction Methodology and Procedures I	3
ARC	225 Site Planning and Technology	3
BLD	200 Sustainable Constructions	3
BLD	241 Construction Management III	3
PED	116 Lifetime Fitness and Wellness	1
<sup>4</sup> CST	Elective	3
	<b>Total</b>	<b>16</b>

4th Semester		
ARC	134 Construction Methodology and Procedures II	3
ARC	243 Environmental Systems or	4
5	Technical Elective	
BLD	242 Construction Management IV	3
BLD	247 Construction Planning and Scheduling	3
6	— Social Sciences Elective	3
	<b>Total</b>	<b>16</b>

**Total credits for the A.A.S. Degree in Construction Management Technology = 68**

- 1 May substitute the SDV 101 Orientation section related to this program.
- 2 See humanities/fine arts courses listed under General Education Electives.
- 3 Students transferring to a four-year college or university should consider taking MTH 167, 5 cr.; or MTH 263, 4 cr. instead of MTH 161.
- 4 Select from the following: CST 100, CST 110, CST 126, or CST 229.
- 5 Technical elective courses must be approved by the program academic advisor. May be selected from the following: ARC 134, CAD 202, CAD 203, CAD 260, CIV 171, EGR Static 130 or 240, or EGR 246.
- 6 See social/behavioral science courses listed under General Education Electives. Students planning to transfer to a four-year degree program should consider taking HIS 102.

## Construction Management Technology: Construction Supervision Career Studies Certificate

Offered through AL

**Purpose:** The curriculum is designed to qualify personnel in both building construction and engineering technologies. Job opportunities include employment within construction companies, assisting project managers and general contractors in preparing estimates, contract document interpretation, and construction administration. Independent employment may include construction site supervision and facilities management.

One Year		Credits
1st Semester		
BLD	101 Construction Management I	3
BLD	165 Construction Field Operations	2
BLD	231 Construction Estimating I	3
CAD	165 Architectural Blueprint Reading	3
	<b>Total</b>	<b>11</b>

2nd Semester		
ARC	133 Construction Methodology and Procedures I	3
BLD	215 OSHA 30 Construction Safety	2
CIV	171 Surveying I	3
1	— Technical Elective	3
	<b>Total</b>	<b>11</b>

**Total credits for the Construction Supervision Career Studies Certificate = 22**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

- 1 Technical elective courses must be approved by the program academic advisor. May be selected from the following: ARC 134, CAD 202, CAD 203, CAD 260, CIV 171, EGR Static 130 or 240, or EGR 246.

## Contract Management

Associate of Applied Science Degree

Offered through W0

**Purpose:** This curriculum is designed for individuals who plan to seek employment in contract management positions and for those presently in contract management positions who seek career advancement. The program is designed to create opportunities for positions in contract management for both government agencies and private industry. Instruction includes both the theoretical concepts and the practical applications needed for future success in the contract management field. This will provide a greater understanding of acquisition, life cycle management, and contracting processes. Job opportunities include project manager, procurement analyst, contract administrator, contract specialist, contract negotiator, contract price analyst, and contract termination specialist.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Admission Requirements:** In addition to the general admission requirements of the College, entry into the program requires proficiency in high school English and mathematics. Students with deficiencies will require developmental studies.

Two Years		Credits
1st Semester		
CON	100 Shaping Business Arrangements	3
CON	104 Federal Acquisition Regulation (FAR) Fundamentals I	3
ENG	111 College Composition I	3
ITE	115 Intro. to Computer Applications and Concepts	3
1	MTH 154 Quantitative Reasoning	3
2	SDV 100 College Success Skills	1
	<b>Total</b>	<b>16</b>

2nd Semester		
CON	105 Federal Acquisition Regulation (FAR) Fundamentals II	3
CON	121 Strategic Focused Contracting II	3
CST	110 Intro. to Communication	3
3	ECO 120 Survey of Economics	3
ENG	112 College Composition II	3
	<b>Total</b>	<b>15</b>

3rd Semester		
ACC	211 Principles of Accounting I	3
BUS	200 Principles of Management	3
CON	170 Fundamentals of Cost and Price Analysis	3
CON	214 Business Decisions for Contracting	3
4	— Humanities/Fine Arts Elective	3
	<b>Total</b>	<b>15</b>

4th Semester		
ACC	212 Principles of Accounting II	3
BUS	220 Intro. to Business Statistics	3
CON	124 Contract Execution	3
CON	127 Contract Administration	3
CON	216 Legal Considerations in Contracting	3
CON	217 Cost Analysis and Negotiation Techniques	3
<b>Total</b>		<b>18</b>

**Total credits for the A.A.S. Degree in Contract Management = 64**

- May substitute a higher-level mathematics course. Consult an academic advisor for appropriate selection.
- May substitute the SDV 101 Orientation section related to this program.
- May substitute ECO 201 or 202.
- See humanities/fine arts courses listed under General Education Electives.

## Contract Management

Certificate

Offered through WO

**Purpose:** This curriculum is designed for students wishing to take courses directly related to the contract management field. Upon successful completion, employment objectives include project management, procurement analyst, contract administrator, contract negotiator, contract price analyst, contract termination specialist, and contracting officer.

One Year		Credits
1st Semester		
CON	100 Shaping Business Arrangements	3
CON	104 Federal Acquisition Regulation (FAR) Fundamentals I	3
CON	121 Strategic Focused Contracting II	3
CON	124 Contract Execution	3
<sup>1</sup> ECO	120 Survey of Economics	3
ENG	111 College Composition I	3
<sup>2</sup> SDV	100 College Success Skills	1
<b>Total</b>		<b>19</b>
2nd Semester		
CON	105 Federal Acquisition Regulation (FAR) Fundamentals II	3
CON	127 Contract Administration	3
CON	170 Fundamentals of Cost and Price Analysis	3
CON	214 Business Decisions for Contracting	3
CON	216 Legal Considerations in Contracting	3
CON	217 Cost Analysis and Negotiation Techniques	3
<b>Total</b>		<b>18</b>

**Total credits for the Contract Management Certificate = 37**

- May substitute ECO 201 or 202.
- Students may substitute the SDV 101 Orientation section related to this program.

## Convention Management

See Hospitality Management

## Culinary Arts Certificate

See Hospitality Management

## Criminology and Criminal Justice

Associate of Science Degree

Offered through AN, MA, WO

**Purpose:** This program is designed to prepare students to transfer to a four-year college or university to complete a baccalaureate degree program in criminal justice, criminology, or related fields.

**Transfer Information:** Since four-year colleges can vary in their course and GPA requirements, please consult an advisor regarding specific requirements and course selection. The program is designed to transfer especially well to George Mason University.

**Recommended Preparation:** Satisfactory completion of the following high school units or equivalent: 4 units of English; 4 units of mathematics (algebra I-II, geometry and pre-calc); 1 unit of laboratory science; and 1 unit of social studies.

Two Years		Credits
1st Semester		
ADJ	100 Survey of Criminal Justice	3
ENG	111 College Composition I	3
HIS	112 History of World Civilization II	3
MTH	154 Quantitative Reasoning or Higher	3
SDV	100 College Success Skills or SDV 101	1
<b>Total</b>		<b>13</b>
2nd Semester		
ADJ	107 Survey of Criminology	3
CST	110 Intro. to Communication	3
<sup>1</sup> ENG	112 College Composition or ENG 125 Introduction to Literature	3
ITE	115 Intro. to Computer Applications and Concepts	3
PSY	200 Principles of Psychology	3
<b>Total</b>		<b>15</b>
3rd Semester		
ADJ	211 Criminal Law, Evidence, and Procedures I	3
ADJ	234 Terrorism and Counter-Terrorism or ADJ 236 Principles of Criminal Investigation	3
<sup>2</sup> BIO	101 General Biology I	4
MTH	245 Statistics I or Higher	3
SOC	200 Principles of Sociology	3
<b>Total</b>		<b>16</b>
4th Semester		
ART	100 Art Appreciation or CST 151 Film Appreciation	3
ADJ	105 Juvenile Justice System or ADJ 140 Introduction to Corrections	3
ADJ	133 Ethics and the Criminal Justice Professional	3
<sup>2</sup> BIO	102 General Biology II	4
REL	100 Intro. to the Study of Religion or REL 231 Religions of the World I	3
<b>Total</b>		<b>16</b>

**Total credits for the A.A.S. Degree in Criminology and Criminal Justice = 60**

- Students planning to transfer to Mason should take ENG 125. Students planning to attend most other institutions should take ENG 112. Check institution to which you plan to transfer.
- Students may substitute CHM 101-102 or CHM 111-112 if they also meet the mathematics prerequisites for these courses.

## Cybersecurity-Related Programs

See also Computer Science and Information Technology

## Cybersecurity

Associate of Applied Science Degree

Offered through AL, AN, LO, MA, WO

**Purpose:** This curriculum is designed for those who seek employment in the field of Cybersecurity (information assurance), for those who are presently in IT or a security field and who desire to increase their knowledge and update their skills, and for those who must augment their abilities in other fields with knowledge and skills in information security. The curriculum is mapped to the NSA/DHS Knowledge Units necessary for NOVA's designation as a Center of Academic Excellence.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements and arrangements that facilitate the transfer of this degree to selected senior institutions. Students interested in transfer should contact their academic advisor early in the program for specific course requirements.

**Recommended Preparation:** The student should possess a proficiency in high school English, high school algebra and geometry, and computer keyboarding skills.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
ITE	115 Intro. to Computer Applications and Concepts	3
ITN	101 Intro. to Network Concepts or ITN 100 Intro. to Telecommunications	3
ITP	100 Software Design	3
<sup>1</sup> MTH	154 Quantitative Reasoning	3
SDV	100 College Success Skills or SDV 101	1
<b>Total</b>		<b>16</b>
<b>2nd Semester</b>		
<sup>2</sup> —	Humanities/Fine Arts Elective	3
ITN	106 Microcomputer Operating Systems	3
ITN	107 Personal Computer Hardware and Troubleshooting or ITE 221 PC Hardware and OS Architecture	3
ITN	260 Network Security Basics	3
<sup>3</sup> —	Social Science Elective	3
<b>Total</b>		<b>15</b>
<b>3rd Semester</b>		
<sup>4</sup> CST	110 Intro. to Communication	3
ITN	200 Administration of Network Resources	3
<sup>5</sup> ITP	Programming Elective	4
ITN	171 UNIX or Linux System Administration or ITN 170 Linux System Administration	3
ITN	261 Network Attacks, Computer Crime, and Hacking	4
<b>Total</b>		<b>17</b>

4th Semester		
ITN	262 Network Communication, Security and Authentication	4
ITN	263 Internet/Intranet Firewall and E-Commerce	4
ITN	266 Network Security Layers	3
ITN	276 Computer Forensics I	3
<sup>6</sup> —	IT Security Elective	3
<b>Total</b>		<b>17</b>

**Total credits for the A.A.S. Degree in Applied Science in Cybersecurity = 65**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

- <sup>1</sup> May substitute a higher-level mathematics course. Consult with an academic advisor for appropriate selection.
- <sup>2</sup> See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
- <sup>3</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>4</sup> Select from the following: CST 100, CST 110, CST 126, and CST 229.
- <sup>5</sup> Select from the following: ITP 112, ITP 120, ITP 130, ITP 132, ITP 136, or ITP 225.
- <sup>6</sup> Select from the following: ITN 267, ITN 277, ITN 290 – Coordinated Internship, or ITN 295. Students not transferring to a Bachelor's program are encouraged to enroll into an internship or participate in a Cybersecurity competition and should discuss options with their academic advisor.

## Cybersecurity

Career Studies Certificate

Offered through AL, MA, WO

**Purpose:** This program is designed as an enhanced competency module to provide expertise in security to networking specialists. This curriculum will prepare networking specialists for employment as network security specialists or Internet security specialists. This program also helps prepare students for the Security+ and the CISSP certification exams.

One Year		Credits
<b>1st Semester</b>		
ITE	115 Intro. to Computer Applications and Concepts	3
ITN	101 Intro. to Network Concepts or ITN 100 Intro. to Telecommunications	3
ITN	260 Network Security Basics	3
ITN	266 Network Security Layers	3
<b>Total</b>		<b>12</b>
<b>2nd Semester</b>		
ITN	261 Network Attacks, Computer Crime, and Hacking	4
ITN	262 Network Communication, Security and Authentication	4
ITN	263 Internet/Intranet Firewalls and E-Commerce Security	4
<sup>1</sup> ITN	— Elective	3
<b>Total</b>		<b>15</b>

**Total credits for the Career Studies Certificate in Cybersecurity = 27**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

<sup>1</sup> Approved electives may be selected from ITN 276, ITN 277, ITN 290 or ITN 295

### Database Specialist Career Studies Certificate

See Information Systems Technology

### Deaf Studies Specialization A.S.

See Social Sciences

### Dental Hygiene A.A.S.

See Medical Education section

### Diagnostic Imaging

See Medical Education: Radiography

### Diagnostic Medical Sonography A.A.S.

See Medical Education section

### Diesel Mechanics Technology Career Studies Certificate

See Automotive Technology

### Drafting Specialization

See Architectural Drafting

### Driver Education Instructor Career Studies Certificate

Career Studies Certificate

**Offered through MA**

**Purpose:** This program is designed for students who wish to become qualified teachers of driver education or maintain qualifications in the state of Virginia.

One Semester	Credits
<sup>1</sup> CST/ENG Elective	3
<sup>2</sup> EDU 114 Driver Task Analysis	3
<sup>2</sup> EDU 214 Instructional Principles of Driver Education	3
<b>Total</b>	<b>9</b>

**Total credits for the Driver Education Instructor Career Studies Certificate = 9**

<sup>1</sup> May be met by ENG 111 or other ENG courses approved by a student's advisor, or by CST 100 or CST 110.

<sup>2</sup> These classes are taught in eight-week sessions.

### Early Childhood Development

Associate of Applied Science Degree

**Offered through AL, LO, MA**

**Purpose:** The curriculum is designed for individuals who seek employment involving the care and education of young children, or for those persons presently employed in these situations who wish to update and enhance their competencies. Job opportunities include program leaders, supervisors, and/or directors in child development programs.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor with the Early Childhood Programs for further information.

Two Years		Credits
<b>1st Semester</b>		
EDU	235 Health, Safety, and Nutrition Education	3
CHD	120 Intro. to Early Childhood Education	3
CHD	145 Teaching Art, Music, and Movement to Children	3
CHD	205 Guiding the Behavior of Children	3
ENG	111 College Composition I	3
SDV	100 College Success Skills or SDV 101	1
<b>Total</b>		<b>16</b>
<b>2nd Semester</b>		
CHD	118 Language Arts for Young Children	3
CHD	146 Math, Science, Social Studies for Children	3
CHD	165 Observation/Participation/Early Childhood/Primary Settings	3
CHD	216 Early Childhood Programs, Schools, and Social Change	3
PSY	230 Developmental Psychology	3
<b>Total</b>		<b>15</b>
<b>3rd Semester</b>		
EDU	200 Intro. to Teaching as a Profession	3
ENG	112 College Composition II	3
CHD	166 Infant and Toddler Programs	3
CHD	210 Intro. to Exceptional Children	3
MTH	154 Quantitative Reasoning	3
<b>Total</b>		<b>15</b>
<b>4th Semester</b>		
BIO	101 General Biology I with Lab)	4
CHD	265 Advanced Observation/Participation/Early Childhood/Primary Settings	3
CHD	270 Administration of Child Care Programs	3
ENG	250 Children's Literature or ENG 241 Survey of American Literature I or ENG 242 Survey of American Literature II	3
HIS	121 United States History I or HIS 122 United States History II	3
<b>Total</b>		<b>16</b>

**Total credits for the A.A.S. Degree in Early Childhood Development = 62**

### Early Childhood Development Certificate

**Offered through AL, LO, MA, ELI**

**Purpose:** The curriculum is designed to prepare individuals for employment in environments where the care and education of young children is the primary focus. Job opportunities include employment in child development programs and family child care homes and before and after school-age programs.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor with the Early Childhood Programs for further information.



One Year		Credits
1st Semester		
1	CHD 118 Language Arts for Young Children or CHD 119 Intro. to Reading Methods	3
	CHD 120 Intro. to Early Childhood Education	3
1	CHD 205 Guiding the Behavior of Children or CHD 230 Behavior Management for School-Age Child Care	3
	EDU 235 Health, Safety, and Nutrition Education	3
	ENG 111 College Composition I	3
2	SDV 100 College Success Skills	1
	<b>Total</b>	<b>16</b>

2nd Semester		
1	CHD 145 Teaching Art, Music, and Movement to Children or CHD 225 Curriculum Development for School-Age Child Care	3
	CHD 146 Math, Science and Social Studies for Children	3
	CHD 165 Observation and Participation in Early Childhood/Primary Settings or CHD 270 Administration of Childcare Programs	3
1	CHD 216 Early Childhood Programs, School, and Social Change or CHD 210 Intro. to Exceptional Children	3
	PSY 235 Child Psychology	3
	<b>Total</b>	<b>15</b>

**Total credits for the Early Childhood Development Certificate = 31**

- Students preparing to work with school-age children should take these courses.
- May substitute the SDV 101 Orientation section related to this program.

## Early Childhood Development Career Studies Certificate

Offered through AL, LO, MA, ELI

**Purpose:** This curriculum is designed to prepare individuals to work with young children in safe and healthy environments that are supportive of children's individual physical, cognitive, and social-emotional development. Job opportunities include employment as assistant teachers, teachers, group leaders, or family child care providers in programs for young children.

One Year		Credits
1st Semester		
	CHD 120 Intro. to Early Childhood Education	3
	CHD 145 Teaching Art, Music, and Movement to Children	3
	CHD 205 Guiding the Behavior of Children	3
1	SDV 100 College Success Skills	1
	<b>Total</b>	<b>10</b>
2nd Semester		
	CHD 165 Observation and Participation in Early Childhood/Primary Settings	3
	EDU 235 Health, Safety, and Nutrition Education	3
	<b>Total</b>	<b>6</b>

**Total credits for the Early Childhood Development Career Studies Certificate = 16**

- Students may substitute the SDV 101 Orientation section related to this program.

## Early Childhood Development: Infant and Toddler Care

Career Studies Certificate

Offered through AL, LO, MA, ELI

**Purpose:** The curriculum is designed to prepare individuals to create developmentally appropriate learning environments for infants and toddlers. Job opportunities include employment in child development programs and family child care homes.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor with the Early Childhood Programs for further information.

**Completion Requirements:** Valid first aid and CPR certificates must be presented at the time of completion of all course requirements in order to receive this career studies certificate.

One Year		Credits
1st Semester		
	CHD 120 Intro. to Early Childhood Education	3
	CHD 166 Infant and Toddler Programs	3
	EDU 235 Health, Safety, and Nutrition Education	3
1	SDV 100 College Success Skills	1
	<b>Total</b>	<b>10</b>
2nd Semester		
	CHD 164 Working with Infants and Toddlers in Inclusive Settings	3
	CHD 165 Observation/Participation in Early Childhood/Primary Settings	3
	<b>Total</b>	<b>6</b>

**Total credits for the Infant and Toddler Care Career Studies Certificate = 16**

- May substitute the SDV 101 Orientation section related to this program.

## Emergency Medical Services

See Medical Education section

## Engineering

Associate of Science Degree

Offered through AL, AN, LO, MA

**Purpose:** The curriculum is designed to prepare the student to transfer into a baccalaureate degree program in engineering fields such as mechanical engineering, civil engineering, chemical engineering, aeronautical engineering, and naval architecture/marine engineering.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

**Recommended Preparation:** High school courses: 4 units of English, 2 units of algebra, 1 unit of geometry, 1 unit of trigonometry, 1 unit of laboratory science (chemistry or physics).

**Completion Requirements:** Grades of “C” and above are required in courses intended to be transferred for credit to a baccalaureate degree-granting college/university.

Two Years		Credits
<b>1st Semester</b>		
<sup>1</sup> CST	Elective	3
ENG	111 College Composition I	3
<sup>2</sup> —	Humanities/Fine Arts Elective	3
MTH	263 Calculus I	4
SDV	100 College Success Skills or SDV 101 related to this program	1
<sup>3</sup> —	Social Science Elective	3
	<b>Total</b>	<b>17</b>
<b>2nd Semester</b>		
<sup>4</sup> EGR	120 Intro. to Engineering	2
<sup>5</sup> ENG	112 College Composition II or ENG 125 Intro to Literature	3
MTH	264 Calculus II	4
PHY	231 General University Physics I	5
<sup>6</sup> —	Engineering/Technical Elective A	3–4
	<b>Total</b>	<b>17–18</b>
<b>3rd Semester</b>		
<sup>6</sup> —	Engineering/Technical Elective B	3
<sup>6</sup> —	Engineering/Technical Elective C	2–3
MTH	265 Calculus III	4
PHY	232 General University Physics II	5
<sup>3</sup> —	Social Science Elective	3
	<b>Total</b>	<b>17–18</b>
<b>4th Semester</b>		
<sup>2</sup> —	Humanities/Fine Arts Elective	3
MTH	267 Differential Equations	4
<sup>6</sup> —	Engineering/Technical Elective D	3–4
<sup>6</sup> —	Engineering/Technical Elective E	1–3
<sup>6</sup> —	Engineering/Technical Elective F	3–4
	<b>Total</b>	<b>13–17</b>

**Total credits for the A.S. Degree in Engineering = 64–70**

- May be selected from the following: CST 100, CST 110, CST 126, or CST 229.
- See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
- See social/behavioral science courses listed under General Education Electives.
- May substitute EGR 295. EGR 295 should only be taken instead of EGR 120 for students intending to transfer to Mechanical Engineering at George Mason University.
- May substitute ENG 125 with the advice of a counselor or academic advisor according to requirements of the transfer institution.
- Engineering/Technical Electives should be chosen carefully in conjunction with an advisor. Use the following table as a guideline. Consult the requirements of the transfer institution.

Engineering/Technical Electives  
 EGR 126 – 3cr, EGR 206 – 2cr, EGR 240 – 3cr, EGR 245 – 3cr, EGR 246 – 3cr, EGR 251 – 3cr, EGR 252 – 3cr, EGR 255 – 1cr, EGR 295 – 3cr, MTH 266 – 3cr, MTH 288 – 3cr, CHM 111 – 4cr, CHM 112 – 4cr, CHM 241 – 3cr, CHM 245 – 2cr, CIV 240 3cr, CIV 280 – 3cr, CSC 201 – 4cr, CSC 202 – 4cr, PHY 243 – 4cr.

George Mason Disciplines	Civil Engineering	Mechanical Engineering	Systems Engineering
A	CHM 111	CHM 111	CSC 201
B	EGR 126	MTH 285	MTH 285
C	EGR 240	EGR 240	EGR 240
D	CIV 240	EGR 245	EGR 245
E	EGR 246	EGR 246	EGR 246
F	CIV 280	CSC 201	CSC 202
Other Electives Not Required for Degree but may be transferrable	CIV 225/226 CIV 265		

Virginia Tech Disciplines	Aerospace Engineering	Chemical Engineering	Civil Engineering	Mechanical Engineering
A	CHM 111	CHM 111	CHM 111	CHM 111
B	EGR 240	CHM 112	EGR 240	EGR 240
C	EGR 295	EGR 295	EGR 206	EGR 295
D	EGR 245	CHM 241	EGR 246	EGR 245
E	EGR 246	CHM 245	MTH 285	EGR 246
F	MTH 285	MTH 285	EGR 295	EGR 285
Other Electives Not Required for Degree but may be transferrable			GOL 105 EGR 126	EGR 251

Old Dominion Disciplines	Civil Engineering	Mechanical Engineering
A	CHM 111	CHM 111
B	EGR 126	EGR 126
C	EGR 240	EGR 240
D	CHM 112	CHM 112
E	EGR 245	EGR 245
F	EGR 246	EGR 246
Other Electives Not Required for Degree but may be transferrable	GOL 105	EGR 115

## Engineering Technology

### Associate of Applied Science

Offered through LO, MA

**Purpose:** This program is designed to prepare students for employment as a technician, operator, and/or technologist in the fields of engineering technology, electrical technology, industrial technology, operational technology, sensor technology, automation technology, robotics and mechatronics.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Two Years		Credits
<b>1st Semester</b>		
ELE	150 A.C. and D.C. Circuit Fundamentals	3
ENG	115 Technical Writing	3
IND	123 Introduction to Lean Manufacturing and Six Sigma	1
IND	137 Team Concepts & Problem Solving	3
<sup>1</sup> MEC	140 Introduction to Mechatronics	3
SAF	130 Industrial Safety – OSHA 10 -	1
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>15</b>
<b>2nd Semester</b>		
CAD	175 Schematic and Mechanical Diagrams	2
ELE	146 Electric Motor Control	4
ELE	233 Programmable Logic Controller System I	3
MTH	111 Basic Technical Mathematics	3
<sup>1</sup> MEC	230 Mechatronic Process Control	3
	<b>Total</b>	<b>15</b>
<b>3rd Semester</b>		
CST	126 Interpersonal Communications	3
ETR	281 Digital Systems	3
INS	233 Process Control Integration	4
MEC	270 Computations for Engineering Technology	3
<sup>1,2</sup> ___	Technical Elective	3
	<b>Total</b>	<b>16</b>
<b>4th Semester</b>		
ELE	211 Electric Machines I	3
MEC	266 Applications of Fluid Mechanics	3
<sup>3</sup> ___	Humanities/Fine Arts Elective	3
<sup>4</sup> ___	Social/Behavior Science Elective	3
<sup>1,2</sup> ___	Technical Elective	3
	<b>Total</b>	<b>15</b>

**Total credits for the A.A.S. Degree in Engineering Technology = 61**

- <sup>1</sup> MEC 140, MEC 230, MEC 266, INS 233 and ETR 281 are only offered on the Manassas Campus.
- <sup>2</sup> Approved Technical Electives: INS 230, ETR 286, BUS 204, ELE 189, or ELE 250.
- <sup>3</sup> See humanities/fine arts courses listed under General Education Electives.
- <sup>4</sup> See social/behavior science courses listed under General Education Electives.

## Engineering Technology: Data Center Operations Specialization

Associate of Applied Science

Offered through LO

**Purpose:** This program is designed to prepare students for employment in data centers or companies that support data center function as a technician, operator and/or technologist. Coursework will prepare students to earn BICSI Installer 1, Installer 2 (Copper) and Installer 2 (Fiber Optic) industry credentials.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Two Years		Credits
<b>1st Semester</b>		
ELE	150 A.C. and D.C. Circuit Fundamentals	3
MTH	111 Basic Technical Mathematics	3
ENG	115 Technical Writing	3
IND	123 Introduction to Lean Manufacturing and Six Sigma	1
IND	137 Team Concepts & Problem Solving	3
SAF	130 Industrial Safety – OSHA 10	1
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>15</b>
<b>2nd Semester</b>		
CAD	175 Schematic and Mechanical Diagrams	2
ELE	146 Electric Motor Control	4
<sup>1</sup> ELE	148 Power Distribution Systems	3
ELE	233 Programmable Logic Controller System I	3
<sup>1</sup> ENE	195 Introduction to Data Center Operations	2
	<b>Total</b>	<b>14</b>
<b>3rd Semester</b>		
ELE	189 Data Cabling Communication	3
<sup>1</sup> ENE	228 Building Automation & Energy Management System	3
ETR	281 Digital Systems	3
CST	126 Interpersonal Communication	3
MEC	270 Computations for Engineering Technology	3
	<b>Total</b>	<b>16</b>
<b>4th Semester</b>		
ELE	211 Electric Machines I	3
<sup>2</sup> ELE	250 Fiber Optic Technology or AIR 121 Air Conditioning and Refrigeration I	3-4
<sup>1</sup> ENE	295 Topic in: Critical Site Operations	4
<sup>3</sup> ___	Humanities/Fine Arts Elective	3
<sup>4</sup> ___	Social/Behavior Science Elective	3
	<b>Total</b>	<b>15-16</b>

**Total credits for the A.A.S. Degree in Data Center Operations Specialization = 60-61**

- <sup>1</sup> ENE 195, ENE 228, ENE 295, ELE 148 are only offered on the Manassas and Loudoun campuses.
- <sup>2</sup> AIR 121 is offered on the Loudoun and Woodbridge campuses. ELE 250 is offered on the Loudoun and Manassas campuses.
- <sup>3</sup> See humanities/fine arts courses listed under General Education Electives.
- <sup>4</sup> See social/behavior science courses listed under General Education Electives.

## Engineering Technology: Computer Aided Drafting and Design

Career Studies Certificate

Offered through AL, AN

**Purpose:** This program of study is structured to enable students to improve their skills in computer application for drafting and design in their respective fields. It is important that students confer with a drafting advisor or counselor to better acquaint themselves with the selection of classes in the curriculum.

One Year		Credits
<b>Fall Semester</b>		
CAD	201 Computer Aided Drafting and Design I	4
ENG	111 College Composition I or ENG 115 Technical Writing	3
	<b>Total</b>	<b>7</b>

Spring Semester		
<sup>1</sup> —	Technical Elective	3
<sup>1</sup> —	Technical Elective	2–3
CAD	202 Computer Aided Drafting and Design II	4
<b>Total</b>		<b>9–10</b>

**Total credits for the Computer Aided Drafting and Design Career Studies Certificate = 16–17**

<sup>1</sup> Technical elective must be approved by department.

## Engineering Technology: Site Development

### Career Studies Certificate

Offered through AL

**Purpose:** The curriculum is designed to prepare students for either employment in civil engineering or the construction industry, or to prepare for continuing education in civil engineering technology, urban and landscape planning, or construction management. Job opportunities may include CAD operation, entry-level land planning or land development technician, and civil or construction engineering technician.

One Year		Credits
<b>1st Semester</b>		
BLD	165 Construction Field Operations	2
CAD	201 Computer Aided Drafting and Design I	4
CIV	225 Soil Mechanics	2
CIV	226 Soil Mechanics Laboratory	1
CIV	171 Surveying I	3
EGR	115 Engineering Graphics or	2
	CAD 165 Architectural Blue-Print Reading	3
<b>Total</b>		<b>14–15</b>
<b>2nd Semester</b>		
ARC	225 Site Planning Technology	3
CAD	260 Computer Application for Surveyors and Technicians	3
CIV	280 Introduction to Environment Engineering	3
<sup>1</sup> —	Technical Elective	3
<b>Total</b>		<b>12</b>

**Total credits for the Site Development Career Studies Certificate = 26–27**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

<sup>1</sup> Technical electives must be approved by the program academic advisor. Technical electives may be selected from the following: BLD 101, BLD 200, BLD 231, CIV 228 and CIV 229, or HRT 246.

## Fire Science Technology

### Associate of Applied Science

Offered through MEC, NOVA Online

**Purpose:** The overall goal of the program is to prepare individuals for entry or advancement in the fire service or a related field by providing them with knowledge of the fire protection profession and giving

them the general education necessary to function and advance in one of these professions.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
FST	100 Principles of Emergency Services	3
FST	110 Fire Behavior and Combustion	3
<sup>1</sup> MTH	154 Quantitative Reasoning	3
<sup>2</sup> PED	116 Lifetime Fitness and Wellness	1
<sup>3</sup> —	Social Science Elective	3
SDV	101 Orientation to Fire Science	1
<b>Total</b>		<b>17</b>
<b>2nd Semester</b>		
<sup>4</sup> ENG	115 Technical Writing	3
FST	112 Hazardous Materials Chemistry	3
FST	115 Fire Prevention	3
<sup>5</sup> FST	121 Principles of Fire and Emergency Services Safety and Survival	3
<sup>6</sup> ITE	115 Intro. to Computer Applications and Concepts or Elective	3
<sup>3</sup> —	Social Science Elective	3
<b>Total</b>		<b>18</b>
<b>3rd Semester</b>		
<sup>7</sup> —	CST/FST Elective	3
FST	210 Legal Aspects of Fire Service	3
<sup>8</sup> FST	240 Fire Administration	3
<sup>9</sup> —	Humanities/Fine Arts Elective	3
<sup>10</sup> —	Physical or Life Science Elective w/Lab	3
<b>Total</b>		<b>16</b>
<b>4th Semester</b>		
FST	205 Fire Protection Hydraulics and Water Supply	3
FST	215 Fire Protection Systems	3
FST	220 Building Construction for Fire Protection	3
FST	235 Firefighting Strategy and Tactics	3
FST	245 Fire and Risk Analysis	3
<sup>2</sup> PED	RPK Elective	1
<b>Total</b>		<b>16</b>

**Total credits for the A.A.S. Degree in Fire Science Technology = 67**

- May substitute a higher-level mathematics course. Consult an academic advisor to make the appropriate selection.
- The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 116, 1 cr. plus a PED activities course, 1 cr.; or PED 116, 1 cr. plus RPK activities course. PED 116 is offered as both a 1-credit and a 2-credit course. Active duty firefighters can substitute other credits to meet the PED requirement based on the Credit for Prior Learning Manual.
- See social/behavioral science courses listed under General Education Electives. Fire Science students are encouraged to choose from psychology or sociology.
- May substitute ENG 112, ENG 116, ENG 125, ENG 131, or ENG 205.
- May substitute FST 120.

- <sup>6</sup> May also select from CSC, GIS, ITE, ITN, ITD, ITP courses, or HIM 130.
- <sup>7</sup> May choose from CST 100, CST 110, or FST 135.
- <sup>8</sup> May substitute FST 255.
- <sup>9</sup> See humanities/fine arts courses listed under General Education Electives.
- <sup>10</sup> Select from BIO 101, BIO 141, CHM 101, CHM 111, CHM 121, NAS 101, NAS 150, NAS 161, PHY 101, PHY 102, or PHY 201.

## General Education

### Certificate

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** This program provides a solid foundation in the VCCS and NOVA general education core competency areas. Essentially the first year of an associate of science degree, this certificate is awarded to students placed in A.A. and A.S. degree programs<sup>1</sup> who complete the requirements listed.

One Year		Credits
1st Semester		
ENG	111 College Composition I	3
<sup>2</sup> ___	Humanities/Fine Arts Elective	3
<sup>3</sup> MTH	154 Quantitative Reasoning	3
<sup>4</sup> ___	Physical or Life Science Elective w/Lab	4
<sup>5</sup> ___	Social/Behavioral Sciences Elective	3
SDV	100 College Success Skills	1
<b>Total</b>		<b>17</b>

2nd Semester		
<sup>6</sup> ENG	112 College Composition II or ENG 125 Introduction to Literature or CST Oral Communication Elective	3
<sup>2</sup> ___	Humanities/Fine Arts Elective	3
<sup>4</sup> ___	Physical or Life Science Elective w/Lab	4
<sup>5</sup> ___	Social/Behavioral Sciences Electives	6
<b>Total</b>		<b>16</b>

**Total credits for the General Education Certificate = 33**

- <sup>1</sup> Students who are placed in A.A.A. and A.A.S. programs may work with a counselor to be placed in this program under certain circumstances. See a counselor for more information.
- <sup>2</sup> See humanities/fine arts courses listed under General Education Electives.
- <sup>3</sup> May substitute higher-level mathematics course.
- <sup>4</sup> See biology, chemistry, physics, ENV 121–122, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>5</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>6</sup> Oral communication elective may be chosen from CST 100, CST 110, CST 127, or CST 229.

## General Studies

### Associate of Science Degree

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** This program is a flexible associate degree. For students who plan to transfer, the degree can parallel the first two years of a four-year bachelor of science program if they choose courses that match the transfer institution's requirements. For those students who do not plan to transfer, the degree allows them to structure a program to suit their needs using accumulated credits from a variety of formal and experiential sources.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student. Students are encouraged to complete the A.S. degree before transferring. Some Virginia colleges and universities exclude General Studies graduates from participating in guaranteed admission programs.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
ITE	115 Intro. to Computer Applications and Concepts or CSC 110 Intro. to Computing	3
MTH	154 Quantitative Reasoning or higher	3
<sup>1</sup> ___	Physical or Life Science Elective w/Lab	4
SDV	100 College Success Skills or SDV 101	1
<b>Total</b>		<b>14</b>
2nd Semester		
<sup>2</sup> CST	Elective	3
<sup>3</sup> ENG	112 College Composition II	3
<sup>4</sup> HIS	Elective	3
<sup>5</sup> ___	Humanities/Fine Arts Elective	3
<sup>2</sup> ___	Physical or Life Science Elective w/Lab	4
<b>Total</b>		<b>16</b>
3rd Semester		
<sup>6</sup> ___	General Electives	9
<sup>5</sup> ___	Humanities/Fine Arts Elective	3
<sup>7</sup> ___	Social Science Elective	3
<b>Total</b>		<b>15</b>
4th Semester		
<sup>6</sup> ___	General Electives	12
<sup>7</sup> ___	Social Science Elective	3
<b>Total</b>		<b>15</b>

**Total credits for the A.S. Degree in General Studies = 60**

- <sup>1</sup> See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives (excluding NAS 161–162). Some four-year colleges require a two-semester sequence.
- <sup>2</sup> Select from the following: CST 100, CST 110, CST 126, or CST 229.
- <sup>3</sup> May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- <sup>4</sup> See HIS courses listed under social/behavioral sciences under General Education Electives.
- <sup>5</sup> See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
- <sup>6</sup> If transfer to another college is planned, the elective courses should be selected based on the requirements of the transfer institution.
- <sup>7</sup> See social/behavioral science courses listed under General Education Electives.

## General Studies: Recreation, Parks, and Leisure Studies Specialization

### Associate of Science Degree

Offered through AN

**Purpose:** This program is designed to prepare students to transfer into baccalaureate programs in leisure studies and recreation and parks and to



prepare students for entry-level employment in the profession.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student. Students are encouraged to complete the A.S. degree before transferring.

Two Years		Credits
<b>1st Semester</b>		
	ENG 111 College Composition I	3
<sup>1</sup>	____ Humanities/Fine Arts Elective	3
	PED 116 Lifetime Fitness and Wellness	1
	RPK 100 Intro. to Recreation, Parks, and Leisure Studies	3
<sup>2</sup>	____ Social Science Elective	3
	SDV 100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>14</b>
<b>2nd Semester</b>		
<sup>3</sup>	CST Elective	3
<sup>4</sup>	ENG 112 College Composition II	3
	ITE 115 Intro. to Computer Applications and Concepts	3
<sup>5</sup>	____ Physical or Life Science Elective w/Lab	4
	RPK 201 Recreation and Parks Management	3
	<b>Total</b>	<b>16</b>
<b>3rd Semester</b>		
<sup>1</sup>	____ Humanities/Fine Arts Elective	3
<sup>5</sup>	____ Physical or Life Science Elective w/Labe	4
	RPK 141 Leadership and Supervision or RPK 120 Outdoor Recreation	3
	RPK 265 Risk Management	3
<sup>2</sup>	____ Social Science Elective	3
	<b>Total</b>	<b>16</b>
<b>4th Semester</b>		
	MTH 154 Quantitative Reasoning or MTH 245 Statistics I	3
	RPK 135 Program Planning or RPK 125 Outdoor Education and Interpretation	3
<sup>6</sup>	RPK Electives	9
	<b>Total</b>	<b>15</b>

**Total credits for the A.S. Degree in General Studies with a Specialization in Recreation, Parks, and Leisure Studies = 61**

- <sup>1</sup> See humanities/fine arts courses listed under General Education Electives. Elective should be selected with the advice of a counselor or academic advisor to meet the requirements of the transfer institution.
- <sup>2</sup> See social/behavioral science courses listed under General Education Electives. One of the selections should be a history course.
- <sup>3</sup> Select from the following: CST 100, CST 110, CST 126, or CST 229.
- <sup>4</sup> May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- <sup>5</sup> See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>6</sup> Any RPK courses listed in this Catalog are considered approved recreation electives.

## Geographic Information Systems (GIS)

### Career Studies Certificate

#### Offered through LO

**Purpose:** This program is designed to help students develop both the theoretical knowledge and a practical facility with GIS. Students who already hold a baccalaureate or master's degree will acquire the requisite skills and knowledge to switch careers, or to apply spatial analysis in their present workplaces. Students will be positioned to pursue additional coursework toward an associate degree and/or transfer to a four-year institution for further study in the geospatial, environmental, or physical sciences; in civil engineering; in information technology; or in business/marketing at a four-year institution.

**Preparation:** Students are expected to understand fundamental computer applications and concepts before enrolling in GIS courses.

One Year		Credits
<b>1st Semester</b>		
<sup>1</sup>	ENG/CST Elective	3
	GEO 220 World Regional Geography	3
	GIS 200 Geographic Information Systems I	4
	<b>Total</b>	<b>10</b>
<b>2nd Semester</b>		
	GIS 201 Geographic Information Systems II	4
	GIS 255 Exploring Our Earth: Intro. to Remote Sensing	3
<sup>2</sup>	____ Elective	3–4
	<b>Total</b>	<b>10–11</b>
<b>3rd Semester</b>		
	GIS 203 Intro. to Cartography	3
	GIS 205 Geographic Information Systems 3-Dimensional Analysis	4
	GIS 290 Internship	1
	<b>Total</b>	<b>8</b>

**Total credits for the Career Studies Certificate in Geographic Information Systems (GIS) = 28–29**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

To be credited toward the certificate, a minimum grade of “C” for each class is required.

- <sup>1</sup> May be met by ENG 111 or other ENG courses approved by a student's advisor, or by CST 100, CST 110, CST 126, or CST 229.
- <sup>2</sup> Must be chosen from the following disciplines: GIS 200-level course not specified, BIO, CHM, EGR, ENV, GEO, GOL, HIS, ITD, ITN, ITP, MKT, MTH, or PHY.

## Graphic Design

Associate of Applied Science Degree

Offered through AL, LO

**Purpose:** The curriculum is designed for individuals who seek full-time employment in the graphic design field. Job opportunities include graphic designer, art director, illustrator, production artist, package designer and web content developer, among others in the graphic design marketplace.

**Recommended Preparation:** Proficiency in high school English and a satisfactory aptitude for drawing.

**Equipment and Supplies:** Graphic Design students are required to purchase certain basic equipment and materials necessary to achieve professionally oriented objectives. Most of the equipment is purchased in the beginning class, ART 140 Introduction to Graphic Skills, and can be used throughout the two-year program.

Two Years		Credits
<b>1st Semester</b>		
ART	121 Drawing I	3
ART	131 Fundamentals of Design I	3
ART	140 Intro. to Graphic Skills	3
ENG	111 College Composition I	3
SDV	100 College Success Skills or SDV 101	1
<sup>1</sup> ___	Social Science Elective	3
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
ART	116 Design for the Web I	3
ART	135 Visual Communications	3
ART	141 Typography I	3
ART	209 Creative Concepts and Writing	3
<sup>2</sup> PHT	ART 251 Communication Design I or 270 Digital Imaging I	3
	<b>Total</b>	<b>15</b>
<b>3rd Semester</b>		
ART	142 Typography II	3
ART	217 Graphic Design I	3
ART	265 Graphic Techniques	3
<sup>3</sup> ART	Elective	3
<sup>4</sup> MTH	154 Quantitative Reasoning or Physical or Life Science Elective w/Lab	3-4
	<b>Total</b>	<b>15-16</b>
<b>4th Semester</b>		
ART	218 Graphic Design II	3
ART	250 History of Design	3
ART	287 Portfolio and Resume Preparation	3
<sup>3</sup> ART	Elective	3
CST	110 Intro. to Communication	3
<sup>5</sup> ___	Humanities Elective (non-ART)	3
	<b>Total</b>	<b>18</b>

**Total credits for the A.A.S. Degree in Graphic Design = 64-65**

- See social/behavioral science courses listed under General Education Electives.
- PHT 270 will teach digital imaging from a photography perspective, whereas ART 251 provides a design perspective.
- Approved ART Electives: ART 117, ART 122, ART 132, ART 268, ART 270, ART 281, or division approval for other ART courses.
- Division approval required for substitution. The science elective may be selected from biology, chemistry, ENV 121-122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.

<sup>5</sup> See fine arts/humanities courses other than ART listed under General Education Electives.

## Graphic Design: Interactive Design Specialization

Associate of Applied Science Degree

Offered through AL, LO

**Purpose:** The curriculum is designed for individuals who seek full-time employment in the communication design profession. Upon completion, an individual would be prepared to work in the field of web-based interactive design including multimedia techniques specific to the web. Job opportunities include web designer, UX designer, web content developer and motion graphic designer, among others in the graphic design marketplace.

**Recommended Preparation:** Proficiency in high school English and a satisfactory aptitude for drawing.

**Equipment and Supplies:** Graphic Design students are required to purchase certain basic equipment and materials necessary to achieve professionally oriented objectives. Most of the equipment is purchased in the beginning class, ART 140 Introduction to Graphic Skills, and can be used throughout the two-year program.

Two Years		Credits
<b>1st Semester</b>		
ART	121 Drawing I	3
ART	131 Fundamentals of Design I	3
ART	140 Intro. to Graphic Skills	3
ENG	111 College Composition I	3
SDV	100 College Success Skills or SDV 101	1
<sup>1</sup> ___	Social Science Elective	3
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
ART	116 Design for the Web I	3
ART	135 Visual Communications	3
ART	209 Creative Concepts and Writing	3
PHT	ART 251 Communication Design I or 270 Digital Imaging I or ART 251 Communication Design I	3
<sup>2</sup> ___	Humanities Elective (non-ART)	3
	<b>Total</b>	<b>15</b>
<b>3rd Semester</b>		
ART	141 Typography I	3
ART	263 Interactive Design I	3
ART	270 Motion Graphics	3
<sup>3</sup> ART	Elective	3
<sup>4</sup> MTH	154 Quantitative Reasoning or Physical or Life Science Elective w/Lab	3-4
___	<b>Total</b>	<b>15-16</b>
<b>4th Semester</b>		
ART	142 Typography II	3
ART	250 History of Design	3
ART	264 Interactive Design II	3
ART	287 Portfolio and Resume Preparation	3
<sup>3</sup> ART	Elective	3
CST	110 Intro. to Communication	3
	<b>Total</b>	<b>18</b>

**Total credits for the A.A.S. Degree in Graphic Design with a Specialization in Interactive Design = 64-65**

- <sup>1</sup> See social/behavioral science courses listed under General Education Electives
- <sup>2</sup> See fine arts/humanities courses other than ART listed under General Education Electives.
- <sup>3</sup> Approved ART electives: ART 117, ART 112, ART 132, ART 268, ART 270, ART 281, or division approval for other ART courses.
- <sup>4</sup> Division approval required for substitution. The science elective may be selected from biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.

## Graphic Design: Multimedia Design Certificate

Offered through AL, LO

**Purpose:** This curriculum is designed to prepare the student for employment as a visual communicator in the field of multimedia production and to broaden the skills of those presently employed in the profession. The program prepares students to work as visual communicators in the field of multimedia production.

One Year		Credits
1st Semester		
ART	121 Drawing I	3
ART	131 Fundamentals of Design I	3
ART	140 Intro. to Graphic Skills	3
ENG	111 College Composition I	3
<sup>1</sup> SDV	100 College Success Skills	1
<b>Total</b>		<b>13</b>

2nd Semester		
ART	130 Intro. to Multimedia	3
ART	150 History of Film and Animation	3
ART	203 Animation I	3
ART	251 Communication Design	3
<b>Total</b>		<b>12</b>

3rd Semester		
ART	208 Video Techniques or PHT 130 Video I	3
ART	204 Animation II	3
ART	270 Motion Graphics I	3
<sup>2</sup> ____	Social Science Elective	3
<b>Total</b>		<b>12</b>

**Total credits for the Certificate in Multimedia Design = 37**

- <sup>1</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>2</sup> See the social/behavioral science courses listed under General Education Electives.

## Graphic Design: Web Design Specialist Career Studies Certificate

Offered through AL, LO

**Purpose:** This curriculum provides students with the aesthetic and technical knowledge required for the creation of well-designed and organized websites.

One Year		Credits
1st Semester		
ART	115 Current Issues in Web Design	1
ART	116 Design for the Web I	3
ENG	111 College Composition I	3
<b>Total</b>		<b>7</b>

2nd Semester		
ART	117 Design for the Web II	3
ART	251 Communication Design I	3
<b>Total</b>		<b>6</b>

3rd Semester		
ART	190 Coordinated Internship or ART 130 Multimedia or ART 140 Intro. to Graphic Skills or ART 203 Animation I	3
ART	220 Advanced Design for the Web or ART 263 Interactive Design I	3
<b>Total</b>		<b>6</b>

**Total credits for the Web Design Specialist Career Studies Certificate = 19**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

## Health Information Management A.A.S.

See Medical Education section

## Health Information Technology Career Studies Certificate

See Medical Education section

## Health Science

Career Studies Certificate

Offered through AL, AN, LO, MA, MEC, WO, ELI

**Purpose:** The growth and development of the health professions as well as the changes in healthcare requires the healthcare provider be multi-skilled and well prepared. This program is designed for those individuals interested in entering the health professions. The program will enable students interested in healthcare professions to acquire an academic foundation to continue their education in one of the A.A.S. programs offered at the Medical Education Campus or prepare for entry to a variety of allied health baccalaureate programs. Students should consult an academic advisor in selecting electives to this curriculum.

**Continuation Requirements:** Each course in the program major must be completed with a grade of “C” or better before taking the next course in the sequence.

**Occupational Objective:** Prepare students to enter allied health programs and, in turn, prepare students for entry into the health professions.

One Year		Credits
1st Semester		
ENG	111 College Composition	3
<sup>1</sup> BIO	141 Human Anatomy and Physiology I	4
HIM	111 Medical Terminology I	3
<sup>2</sup> ____	Social Science Elective	3
SDV	101 Orientation to Health Professions	1
<b>Total</b>		<b>14</b>

2nd Semester		
<sup>1</sup> BIO	142 Human Anatomy and Physiology II	4
<sup>3</sup> _____	Humanities Elective	3
<sup>4</sup> MTH	154 Quantitative Reasoning	3
<sup>5</sup> _____	Elective	4
	<b>Total</b>	<b>14</b>

**Total credits for the Health Science Career Studies Certificate = 28**

- <sup>1</sup> BIO 141–142 must be completed with a grade of “C” or higher. Students preparing for entry to competitive placement programs (Nursing, Dental Hygiene, Diagnostic Medical Sonography, and Radiography) must earn a grade of “B” or higher.
- <sup>2</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>3</sup> See humanities/fine arts courses listed under General Education Electives.
- <sup>4</sup> MTH 154 or higher-level mathematics course.
- <sup>5</sup> Electives may be chosen from general education program requirements and/or open enrollment major course headings. Students preparing for entry to the following programs may wish to consider these courses:

Dental Hygiene	BIO 205	General Microbiology
Diagnostic Medical Sonography	HLT 220	Concepts of Disease
Diagnostic Medical Sonography	PHY 195	Topics in: Acoustic Physic
Health Information Management	CST 229	Intercultural Communication
Medical Laboratory Technology	CHM 111	General Chemistry I
Radiography	RAD 105	Introduction to Radiology, Protection, and Patient Care
Respiratory Therapy	RTH 120	Fundamental Theory for Respiratory Care

## Homeland Security Specialization

See Administration of Justice

## Horticulture Technology

Associate of Applied Science Degree

**Offered through LO**

**Purpose:** The curriculum is designed to prepare students for full-time employment within the field of commercial horticulture as well as for those presently working who seek further knowledge and advancement.

Graduates of the program are prepared for managerial/supervisory level positions in areas which include landscape design and installation, grounds maintenance, floristry, greenhouse and nursery management, garden center operation, and sales and marketing in related industries.

Students in this program have an opportunity to gain career-related work experience through Cooperative Education or an internship in their area of emphasis.

**Related Specialization:** Landscape Design

Two Years			Credits
1st Semester			
ENG	111 College Composition I		3
HRT	100 Intro. to Horticulture		3
HRT	125 Chemicals in Horticulture		3
HRT	127 Horticultural Botany		3
HRT	160 Applied Mathematics for the Green Industry		2
SDV	100 College Success Skills or SDV 101		1
	<b>Total</b>		<b>15</b>

2nd Semester		
<sup>1</sup> CST	Elective	3
HRT	115 Plant Propagation	3
HRT	120 History of Garden Design	3
HRT	246 Herbaceous Plants	3
<sup>2</sup> _____	Humanities/Fine Arts Elective	3
	<b>Total</b>	<b>15</b>

3rd Semester		
<sup>3</sup> BUS	Elective	3
HRT	207 Plant Pest Management	3
HRT	231 Planting Design I	3
HRT	245 Woody Plants	3
HRT	269 Professional Turf Care	3
<sup>4</sup> _____	Social Science Elective	3
	<b>Total</b>	<b>18</b>

4th Semester		
HRT	205 Soils	3
HRT	247 Indoor Plants	2
HRT	275 Landscape Construction/Maintenance	3
HRT	290 Coordinated Internship or HRT 297 Cooperative Education	1
<sup>5</sup> HRT	Elective	3
<sup>7</sup> _____	MTH 154 Quantitative Reasoning or Physical or Life Science Elective w/Lab	3–4
	<b>Total</b>	<b>15–16</b>

**Total credits for the A.A.S. Degree in Horticulture Technology = 63–64**

- <sup>1</sup> Students may choose from any of the following communication electives: CST 100, CST 115, CST 126, or CST 227.
- <sup>2</sup> Students may choose from any of the following humanities/fine arts courses: ART 100, ART 101, ART 102, or ART 250.
- <sup>3</sup> Students may choose from any of the following business electives: BUS 116, BUS 117, BUS 165.
- <sup>4</sup> Students may choose from any of the following electives: ECO 110, ECO 120 or GEO 200.
- <sup>5</sup> Course chosen must align with Coordinated Internship or Cooperative Education focus. *Example:* If the Internship is with a Vineyard and focus is on vine establishment, VEN 110 would be an appropriate course.
- <sup>6</sup> Students may choose from any of the following electives: BIO 101, ENV 121, GOL 105, NAS 125, or other course approved by the academic advisor.

## Horticulture Technology: Landscape Design Specialization

Associate of Applied Science Degree

**Offered through LO**

**Purpose:** This program is designed to prepare the student for full-time employment within the field of landscape design as well as assisting those who are presently working and who wish to further their knowledge and upgrade their skills.

Graduates of this degree are prepared to work in the field of landscape design, in nurseries and garden centers, and as institutional horticultural staff.

Students in this degree have the opportunity to gain career-related work experience through a Coordinated Internship, Cooperative Education, or Special Studio Project in the area of design.

Two Years		Credits
<b>1st Semester</b>		
<sup>1</sup> CST	Elective	3
ENG	111 College Composition I	3
HRT	100 Intro. to Horticulture	3
HRT	160 Applied Mathematics for the Green Industry	2
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>12</b>
<b>2nd Semester</b>		
<sup>2</sup> _____	Humanities/Fine Arts Elective	3
HRT	120 History of Garden Design	3
HRT	230 Site Analysis	2
HRT	246 Herbaceous Plants	3
<sup>3</sup> MTH	154 Quantitative Reasoning or Physical or Life Science Elective w/Lab	3-4
	<b>Total</b>	<b>14-15</b>
<b>3rd Semester</b>		
<sup>4</sup> BUS	Elective	3
HRT	231 Planting Design I	3
HRT	245 Woody Plants	3
HRT	251 Site Engineering for Landscape Design	3
<sup>5</sup> HRT	Elective	3
<sup>6</sup> _____	Social Science Elective	3
	<b>Total</b>	<b>18</b>
<b>4th Semester</b>		
HRT	232 Planting Design II	3
HRT	244 CADD for Landscape Designers	3
HRT	250 Plant Composition	2
HRT	252 Landscape Construction Drawings	3
HRT	275 Landscape Construction and Maintenance	3
HRT	290 Coordinated Internship or HRT 297 Cooperative Education/ Special Studio Project or HRT 298 Seminar and Project	2
	<b>Total</b>	<b>16</b>

**Total credits for the A.A.S. Degree in Horticulture Technology with a Specialization in Landscape Design = 60-61**

- <sup>1</sup> Students may choose from any of the following communication electives: CST 100, CST 115, CST 126, or CST 227.
- <sup>2</sup> Students may choose from any of the following humanities/fine arts courses: ART 100, ART 101, ART 102, or ART 250.
- <sup>3</sup> Students may choose from any of the following electives: BIO 101, ENV 121, GOL 105, NAS 125, or other course approved by the academic advisor.
- <sup>4</sup> Students may choose from any of the following business electives: BUS 116, BUS 117, BUS 165, BUS 200, or BUS 260.
- <sup>5</sup> Course chosen must align with Coordinated Internship or Cooperative Education focus. Example: If the Internship is with a Vineyard and focus is on vine establishment, VEN 110 would be an appropriate course.
- <sup>6</sup> Students may choose from any of the following electives: ECO 110, ECO 120 or GEO 200.

The following HRT courses have prerequisites (listed in parentheses):

- HRT 205 (HRT 125)
- HRT 232 (HRT 231)
- HRT 251 (HRT 231 is a prerequisite or corequisite; HRT 230 is strongly recommended.)
- HRT 252 (HRT 231 and HRT 251; HRT 232 is a prerequisite or corequisite.)
- HRT 250 (HRT 245 or HRT 201)

## Hospitality Management

Associate of Applied Science Degree

Offered through AN

**Purpose:** The curriculum is designed both to enable the student to enter executive training and management positions in the hospitality industry, and for those presently employed who desire updating in the field.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
HRI	101 Hotel Restaurant Organization and Management I	3
<sup>1,2</sup> HRI	120 Principles of Food Preparation	4
HRI	158 Sanitation and Safety	3
<sup>3</sup> MTH	154 Quantitative Reasoning	3
<sup>4</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>17</b>
<b>2nd Semester</b>		
<sup>5</sup> ACC	115 Applied Accounting or 211 Principles of Accounting I	3
CST	110 Intro. to Communication	3
HRI	102 Hotel Restaurant Organization and Management II	3
HRI	138 Commercial Food Production Management	3
TRV	100 Introduction to the Travel Industry	3
	<b>Total</b>	<b>15</b>
<b>3rd Semester</b>		
HRI	251 Food and Beverage Cost Control I	3
HRI	255 Human Resources Management and Training for Hospitality and Tourism	3
<sup>6</sup> HRI	Elective	3
<sup>7</sup> _____	Humanities/Fine Arts Elective	3
<sup>8</sup> _____	Social Science Elective	3
	<b>Total</b>	<b>15</b>
<b>4th Semester</b>		
<sup>1</sup> HRI	256 Principles and Applications of Catering	3
HRI	275 Hospitality Law	3
<sup>7</sup> HRI	Electives	6
<sup>9</sup> _____	Social Science Elective	3
	<b>Total</b>	<b>15</b>

**Total credits for the A.A.S. Degree in Hospitality Management = 62**

- <sup>1</sup> Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student.
- <sup>2</sup> May substitute HRI 106 and HRI 107.
- <sup>3</sup> Students who are planning to transfer to another college or university should select a math course that is equivalent to the transfer school's requirement.
- <sup>4</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>5</sup> Students considering transfer should take ACC 211.
- <sup>6</sup> Preapproved electives can be selected from any course offered with the HRI, TRV, and DIT prefix. See an academic advisor for alternative procedures.
- <sup>7</sup> See humanities/fine arts courses listed under General Education Electives.
- <sup>8</sup> See social/behavioral science courses listed under General



Education Electives. Students who are planning to transfer to another college or university should select social science courses that will meet the other institution's requirement.

<sup>8</sup> See humanities/fine arts courses listed under General Education Electives.

## Hospitality Management: Food Service Management Specialization

Associate of Applied Science Degree

Offered through AN

**Purpose:** The curriculum is designed to enable the student to enter executive training and management positions in hotels, resorts, private clubs, or restaurants and food service operations in institutions. The curriculum specializes in the food service management phase of the hospitality industry.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
HRI	101 Hotel-Restaurant Organization and Management I	3
<sup>1,2</sup> HRI	120 Principles of Food Preparation	4
HRI	158 Sanitation and Safety	3
<sup>3</sup> MTH	154 Quantitative Reasoning	3
<sup>4</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>17</b>
<b>2nd Semester</b>		
CST	110 Intro. to Communication	3
DIT	125 Current Concepts in Diet and Nutrition or DIT 121 Nutrition I	3
HRI	102 Hotel Restaurant Organization and Management II	3
<sup>1,5</sup> HRI	126 The Art of Garnishing	1
HRI	138 Commercial Food Production Management	3
TRV	100 Introduction to the Travel Industry	3
	<b>Total</b>	<b>16</b>
<b>3rd Semester</b>		
<sup>6</sup> ACC	115 Applied Accounting or 211 Principles of Accounting I	3
HRI	225 Menu Planning/Dining Room Service	3
HRI	251 Food and Beverage Cost Control I	3
HRI	255 Human Resources Management and Training for Hospitality and Tourism	3
<sup>7</sup> —	Social Science Elective	3
	<b>Total</b>	<b>15</b>
<b>4th Semester</b>		
HRI	215 Food Purchasing	3
<sup>1</sup> HRI	256 Principles and Applications of Catering	3
HRI	275 Hospitality Law	3
<sup>8</sup> —	Humanities/Fine Arts Elective	3
<sup>7</sup> —	Social Science Elective	3
	<b>Total</b>	<b>15</b>

**Total credits for the A.A.S. Degree in Hospitality Management with a Specialization in Food Service Management = 63**

- <sup>1</sup> Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student.
- <sup>2</sup> May substitute HRI 106 and HRI 107.
- <sup>3</sup> Students who are planning to transfer to another college or university should select a math course that is equivalent to the transfer school's requirement.
- <sup>4</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>5</sup> May substitute HRI 145.
- <sup>6</sup> Students considering transfer should take ACC 211.
- <sup>7</sup> See social/behavioral science courses listed under General Education Electives. Students who are planning to transfer to another college or university should select social science courses that will meet the other institution's requirement.

## Hospitality Management: Culinary Arts Certificate

Offered through AN

**Purpose:** The curriculum is designed for individuals seeking skills for employment in culinary positions and for those presently employed who wish to update their skills for the food service industry.

**Optional Program Information:** The Nation's Capital Chef's Association (NCCA), in cooperation with this program, offered an apprenticeship program that combines relevant classroom instruction with on-the-job training required for the National Apprenticeship Training Program of the American Culinary Federation (ACF). Please contact the HRI office for current program status.

One Year		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
HRI	101 Hotel Restaurant Organization and Management I	3
<sup>1</sup> HRI	106 Principles of Culinary Arts I	3
HRI	145 Garde Manger	3
HRI	225 Menu Planning and Dining Room Services or HRI 251 Food and Beverage Cost Control I	3
<sup>2</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
HRI	107 Principles of Culinary Arts II	3
HRI	128 Principles of Baking	3
HRI	158 Sanitation and Safety	3
HRI	215 Food Purchasing or DIT 121 Nutrition I or DIT 125 Current Concepts in Diet and Nutrition	3
<sup>3</sup> —	Social Science Elective	3
	<b>Total</b>	<b>15</b>

**Total credits for the Culinary Arts Certificate = 31**

- <sup>1</sup> Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student.
- <sup>2</sup> Students may substitute the SDV 101 Orientation section related to this program.
- <sup>3</sup> See the social/behavioral science courses listed under General Education Electives. Students who are planning to transfer to another college or university should select social science courses that will meet the other institution's requirement.

## Hospitality Management: Meeting, Event, and Exhibition Management Certificate

Offered through AN

**Purpose:** The curriculum is designed for individuals seeking careers in the growing field of meeting management and to develop and update the skills of those presently employed in the field. Career opportunities exist in the 2,500 professional and trade associations in the metropolitan Washington region, as well as in the numerous multi-management companies serving the association market.

One Year		Credits	2nd Semester			
<b>1st Semester</b>			<b>2nd Semester</b>			
	ENG	111 College Composition I	5	ENG	112 College Composition II	3
	HRI	103 Intro. to Meeting Planning	3	ITE	170 Multimedia Software	3
	HRI	190 Internship in Meeting Planning or HRI/TRV Elective	2	ITN	100 Intro. to Telecommunications	3
<sup>1</sup>	SDV	100 College Success Skills	1	ITP	100 Software Design	3
<sup>2</sup>	___	Social Science Elective	3	<sup>2,6</sup> MTH	261 Applied Calculus I	3
	GEO	210 People and the Land: Intro to Cultural Geography	3	<b>Total</b>		<b>15</b>
	<b>Total</b>		<b>15</b>	<b>3rd Semester</b>		
<b>2nd Semester</b>			<b>3rd Semester</b>			
	HRI	104 Intro. to Association Management	3	CST	110 Intro. to Communication	3
	HRI	229 Principles of Meeting Planning	3	<sup>7</sup> ITP	120 Java Programming I or ITP 132 C++ Programming I	4
	HRI	230 Exhibition Management	3	<sup>8</sup> ___	Humanities/Fine Arts Elective	3
	HRI	235 Marketing of Hospitality Services	3	<sup>9</sup> ___	Physical or Life Science Elective w/Lab	4
	HRI	275 Hospitality Law or BUS 241 Business Law I	3	<b>Total</b>		<b>14</b>
<sup>2</sup>	___	Social Science Elective	3	<b>4th Semester</b>		
	<b>Total</b>		<b>18</b>	<sup>8</sup> ___	Humanities/Fine Arts Elective	3
<b>Total credits for the Meeting, Event, and Exhibition Management Certificate = 33</b>			<b>Total credits for the A.S. Degree in Information Technology = 61</b>			

- <sup>1</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>2</sup> See social/behavioral science courses listed under General Education Electives.

## Information Technology-Related Programs

See also Computer Science Associate of Science Degree and Cybersecurity Associate of Science Degree

## Information Technology Associate of Science Degree

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** This curriculum is designed for persons who plan to transfer to a four-year college or university to complete a baccalaureate degree program in information technology.

**Transfer Information:** Since four-year colleges can vary in their course and GPA requirements, please consult a counselor or academic advisor regarding specific requirements and course selection.

**Recommended Preparation:** Satisfactory completion of the following high school units or equivalent: 4

units of English; 4 units of mathematics (Algebra I–II, geometry and precalculus); 1 unit of laboratory science; and 1 unit of social studies.

Two Years		Credits	
<b>1st Semester</b>			
	ENG	111 College Composition I	3
<sup>1</sup>	HIS	Elective	3
	ITE	115 Intro. to Computer Applications and Concepts	3
<sup>2</sup>	MTH	161 PreCalculus I or higher-level Mathematics	3
<sup>3</sup>	SDV	100 College Success Skills	1
<sup>4</sup>	___	Social Science Elective	3
	<b>Total</b>		<b>16</b>

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

- <sup>1</sup> Select from HIS 101, HIS 102, HIS 121, or HIS 122. Other HIS courses may be taken after consultation with an academic advisor.
- <sup>2</sup> Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
- <sup>3</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>4</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>5</sup> May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- <sup>6</sup> Students with a qualifying placement test score may wish to take MTH 261 rather than MTH 263. Credit will not be awarded for both MTH 261 and MTH 263.
- <sup>7</sup> Students planning to transfer should contact their academic advisor to meet the requirements of the transfer institution.
- <sup>8</sup> See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
- <sup>9</sup> See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, excluding NAS 161–162, listed under General Education Electives. Some four-year colleges require a two-semester sequence.

## Information Systems Technology Associate of Applied Science Degree

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** This curriculum is designed for those who seek employment in the field of information technology, for those who are presently in that field and who wish to increase their knowledge and update their skills, and for those who must augment their abilities in other fields with knowledge and skills in information technology.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Recommended Preparation:** The student should possess a proficiency in high school English, high school algebra and geometry, and computer keyboarding skills.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
ITE	115 Intro. to Computer Applications and Concepts	3
ITP	100 Software Design	3
MTH	154 Quantitative Reasoning or higher-level mathematics course	3
<sup>1</sup> ___	Social Science Elective	3
SDV	101 Orientation to Information Technology	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
<sup>2</sup> ___	Humanities/Fine Arts Elective	3
ITE	170 Multimedia Software	3
ITN	100 Intro. to Telecommunications or ITN 101 Intro. to Network Concepts	3
<sup>3</sup> ITP	Programming Elective	4
<sup>1</sup> ___	Social Science Elective	3
	<b>Total</b>	<b>16</b>
<b>3rd Semester</b>		
<sup>4</sup> CST	Elective	3
ITD	110 Web Page Design I	3
ITE	221 PC Hardware and OS Architecture or ITN 107 Personal Computer Hardware and Troubleshooting	3
ITN	171 UNIX I or ITN 170 Linux System Adminis	3
<sup>5</sup> ___	IT Electives	6
	<b>Total</b>	<b>18</b>
<b>4th Semester</b>		
<sup>5</sup> ___	IT Electives	9
ITD	256 Advanced Database Management	3
ITN	260 Network Security Basics	3
	<b>Total</b>	<b>15</b>

**Total credits for the A.A.S. Degree in Information Systems Technology = 65**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

- <sup>1</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>2</sup> See humanities/fine arts courses listed under General Education Electives.
- <sup>3</sup> Select from the following: ITP 112, ITP 120, ITP 130, ITP 132, ITP 136, or ITP 225.
- <sup>4</sup> Select from the following: CST 100, CST 110, CST 126, or CST 229.
- <sup>5</sup> The total of 15 credit hours of IT Electives must be met through any combination of IT courses (ITD, ITE, ITN, ITP) that are not already included in the degree.

## Information Systems Technology: Application Programming

Career Studies Certificate

Offered through LO, NOVA Online

**Purpose:** This program prepares the student to design and implement traditional/legacy stand-alone and client-server applications using procedural and object-oriented development techniques. Upon completion, graduates are prepared to study for one of the following industry certifications: MCP-Programming or the Sun Certified Programming for Java 2.

One Year		Credits
<b>1st Semester</b>		
ITP	100 Software Design	3
<sup>1</sup> MTH	154 Quantitative Reasoning	3
	<b>Total</b>	<b>6</b>
<b>2nd Semester</b>		
<sup>2</sup> ITP	120 Java Programming I	4
	<b>Total</b>	<b>4</b>
<b>3rd Semester</b>		
<sup>3</sup> ITP	220 Java Programming II	4
	<b>Total</b>	<b>4</b>

**Total credits for the Career Studies Certificate in Application Programming = 14**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

- <sup>1</sup> May substitute any higher-level mathematics course.
- <sup>2</sup> To prepare for the Oracle Certified Associate.
- <sup>3</sup> To prepare for the Oracle Certified Associate.

## Information Systems Technology: Cloud Computing Specialization

Associate of Applied Science Degree

Offered through AL, LO, MA

**Purpose:** This curriculum is designed for those who seek employment in the field of cloud computing, for those who are presently in that field and who desire to increase their knowledge and update their skills, and for those who must augment their abilities in other fields with knowledge and skills in cloud computing.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Recommended Preparation:** The student should possess a proficiency in high school English, high school algebra and geometry, and computer keyboarding skills.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
ITE	115 Intro. to Computer Applications and Concepts	3
ITP	100 Software Design	3
MTH	154 Quantitative Reasoning or higher-level mathematics course	3
<sup>1</sup> ___	Social Science Elective	3
SDV	101 Orientation to Information Technology	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
<sup>2</sup> ___	Humanities/Fine Arts Elective	3
ITN	101 Introduction to Network Concepts	3
ITN	257 Cloud Computing: Infrastructure and Services	3
<sup>3</sup> ITP	Programming Elective	4
<sup>1</sup> ___	Social Science Elective	3
	<b>Total</b>	<b>16</b>
<b>3rd Semester</b>		
<sup>4</sup> CST	Elective	3
ITN	254 Virtual Infrastructure: Installation and Configuration	4
ITN	107 Personal Computer Hardware and Troubleshooting	3
ITN	170 Linux System Administration	3
<sup>5</sup> ___	IT Electives	3
	<b>Total</b>	<b>16</b>
<b>4th Semester</b>		
ITN	213 Information Storage and Management	3
ITN	110 Web Design I	3
ITN	200 Administration of Network Resources	3
ITN	256 Advanced Database Management	3
ITN	260 Network Security Basics	3
	<b>Total</b>	<b>15</b>

**Total credits for the A.A.S. Degree in Information Systems Technology = 63**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

- <sup>1</sup> The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. Recommended electives include ECO 201, ECO 202, HIS 101, HIS 102 or HIS 112.
- <sup>2</sup> Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Recommended electives include ART 101, ART 102, CST 151 or MUS 121.
- <sup>3</sup> IT Programming elective must be chosen from the following: ITP 112, ITP 120, ITP 130, ITP 132, ITP 136, ITP 225 or ITP 195 (Introduction to Python)
- <sup>4</sup> The CST elective must be selected from the following: CST 100, 110, 115, 126, 227, and 229.
- <sup>5</sup> The total of 3 credit hours of IT Electives may be selected from ITN 106, ITN 290 – Coordinated Internship or ITN 295 – Critical Infrastructure Security

## Information Systems Technology: Cybersecurity

See Cybersecurity section

## Information Systems Technology: Database Specialist

Career Studies Certificate

Offered through MA

**Purpose:** This program is designed to provide students with skills that support the newest capabilities and advances in database technology. These new features in database technology enable databases to increase in scale and provide higher security and greater reliability. This program focuses on training database technologists who can provide these advantages to their employers and stay on the leading edge of database technology. Upon completion, graduates are prepared to study for some of the exams for the Oracle Database Administrator Certified Associate.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year		Credits
<b>1st Semester</b>		
ITD	132 Structured Query Language	3
ITE	115 Intro. to Computer Applications and Concepts	3
ITP	100 Software Design	3
<sup>1</sup> MTH	154 Quantitative Reasoning	3
	<b>Total</b>	<b>12</b>
<b>2nd Semester</b>		
ITD	134 PL/SQL Programming	3
ITD	260 Data Modeling and Design or ITD 256 Advanced Management Systems	3
	<b>Total</b>	<b>6</b>

**Total credits for the Career Studies Certificate in Database Specialist = 18**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

- <sup>1</sup> May substitute any higher-level mathematics course.

## Information Systems Technology: IT Technical Support

Career Studies Certificate

Offered through W0

**Purpose:** This program is designed for individuals seeking employment in a technical support center and for those persons employed who wish to update their skills in the help desk field. This curriculum will prepare students for employment as help desk specialists/technicians, desktop support specialists, and technical support specialists. Upon completion, graduates are prepared to study for the A+ Microsoft Help Desk.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year		Credits
1st Semester		
ITE	115 Intro. to Computer Applications and Concepts	3
ITE	180 Help Desk Support Skills	3
ITN	106 Microcomputer Operating Systems	3
<b>Total</b>		<b>9</b>
2nd Semester		
ITE	182 User Support/Help Desk Principles	3
ITN	107 Personal Computer Hardware and Troubleshooting	3
<b>Total</b>		<b>6</b>

**Total credits for the Career Studies Certificate in IT Technical Support = 15**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

## Information Systems Technology: Network Administration

Career Studies Certificate

Offered through AN, LO, MA, NOVA Online, WO

**Purpose:** This program provides the student with a broad background in networking technologies, administration, and support. The material presented in the certificate provides the basic knowledge covered in the Windows Server, Security+, Linux+ and Network+ Certification. It is recommended that students complete the A+ Certification before the Network+ Certification.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year		Credits
1st Semester		
ITE	115 Intro. to Computer Applications and Concepts	3
ITN	100 Intro. to Telecommunications or ITN 101 Intro. to Network Concepts	3
<b>Total</b>		<b>6</b>
2nd Semester		
ITN	170 Linux System Administration or ITN 171 Unix 1	3
ITN	200 Administration of Network Resources	3
ITN	260 Network Security Basics	3
<b>Total</b>		<b>9</b>

**Total credits for the Career Studies Certificate in Network Administration = 15**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

## Information Systems Technology: Network Engineering (Specialist)

Career Studies Certificate

Offered through AL, AN, MA, NOVA Online, WO

**Purpose:** This program is designed to provide the student with the training necessary to obtain several different CISCO certifications as outlined below. These certifications prepare the student to install and/or configure networks, including wide area networks (WANs) and local area networks (LANs). They prepare students to optimize WANs through internet access solutions that reduce bandwidth and lower WAN costs, and provide remote access by integrating remote dial-up access with remote LAN to LAN access, as well as supporting higher levels of performance required for new applications such as internet commerce and multimedia. This career studies certificate also prepares the student to sit for the CISCO Certified Networking Associate (CCNA) certification exam.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year		Credits
1st Semester		
ITN	154 Networking Fundamentals – CISCO	4
ITN	155 Introductory Routing – CISCO	4
<b>Total</b>		<b>8</b>
2nd Semester		
ITN	156 Basic Switching and Routing – CISCO	4
ITN	157 WAN Technologies – CISCO	4
<b>Total</b>		<b>8</b>

**Total credits for the Career Studies Certificate in Network Engineering (Specialist) = 16**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

## Information Systems Technology: Web Design and Development

Career Studies Certificate

Offered through AL, MA, NOVA Online, WO

**Purpose:** This program provides the student with the aesthetic, technical, and management knowledge required for the creation and management of well-designed and well-organized websites. This career studies certificate also prepares the student for the CIW Associate Certification and the CIW Associate Design Specialist Certification.



**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year		Credits
<b>1st Semester</b>		
ITD	110 Web Page Design I	3
ITE	115 Intro. to Computer Applications and Concepts	3
ITP	100 Software Design	3
<sup>1</sup> MTH	154 Quantitative Reasoning	3
	<b>Total</b>	<b>12</b>
<b>2nd Semester</b>		
ITD	210 Web Page Design II	3
ITE	170 Multimedia Software	3
ITN	100 Intro. to Telecommunications	3
ITP	225 Web Scripting Languages	4
	<b>Total</b>	<b>13</b>

**Total credits for the Web Design and Development Career Studies Certificate = 25**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

<sup>1</sup> May substitute any higher-level mathematics course.

## Interior Design

Associate of Applied Science Degree

Offered through LO

**Purpose:** This program prepares students to become assistant designers or interior design technicians. The curriculum provides a basic education covering a broad range of topics in interior design, art history, furniture history, and basic design. Computer-aided drafting, rendering, and business practices round out the curriculum. Students become knowledgeable in both residential and contract design. Career opportunities exist not only in the retail marketing of furniture, fabrics, and accessories, but also in commercial design firms as space planners, drafters, and technical support staff. The curriculum can be completed in two years; however, students may enroll on a part-time basis. There are no entry requirements, but many IDS courses have prerequisites to insure that students are properly prepared for advanced coursework.

Two Years		Credits
<b>1st Semester</b>		
ART	101 History and Appreciation of Art I	3
ART	131 Fundamentals of Design I	3
ENG	111 College Composition I	3
IDS	100 Theory and Technology of Interior Design	3
<sup>1</sup> PED	116 Lifetime Fitness and Wellness	1
PSY	100 Principles of Applied Psychology	3
<sup>2</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>17</b>

2nd Semester		
ART	102 History and Appreciation of Art II	3
<sup>3</sup> ART	132 Fundamentals of Design II or Elective	3–4
CST	110 Intro. to Communication	3
IDS	105 Architectural Drafting for Interior Design	3
IDS	109 Styles of Furniture and Interiors	3
<sup>1</sup> PED/RPK	Elective	1
	<b>Total</b>	<b>16–17</b>

3rd Semester		
IDS	106 Three Dimensional Drawing/Rendering	3
IDS	206 Lighting and Furnishings	3
IDS	225 Business Procedures	3
MTH	154 Quantitative Reasoning	3
<sup>4</sup> —	Social Science Elective	3
	<b>Total</b>	<b>15</b>

4th Semester		
IDS	205 Materials and Sources	3
IDS	215 Theory/Research Commercial Design	3
IDS	221 Designing Commercial Interiors I	4
IDS	245 Computer-Aided Drafting for Interior Designers	3
<sup>5</sup> IDS	290 Coordinated Internship	3
	<b>Total</b>	<b>16</b>

**Total credits for the A.A.S. Degree in Interior Design = 64–65**

- <sup>1</sup> The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 116, 1 cr. plus a PED activities course, 1 cr.; or PED 116, 1 cr. plus RPK activities course. PED 116 is offered as both a 1-credit and a 2-credit course.
- <sup>2</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>3</sup> May be selected from Interior Design and curricula that offer complementary areas to Interior Design: Architecture Technology, Business Administration, Communication Design, Horticulture Technology, Art History, and Marketing.
- <sup>4</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>5</sup> For those students interested in transfer, an IDS elective may be substituted (with division approval) for the internship.

## Liberal Arts

Associate of Arts Degree

Offered through AL, AN, LO, MA, NOVA Online, WO

**Purpose:** This program is designed for individuals who plan to transfer to a four-year institution to complete a bachelor of arts (B.A.).

**Recommended Preparation:** Satisfactory completion of the following high school units or equivalent: 4 units of English, 2 units of mathematics (algebra and geometry), 2 units of laboratory science, 1 unit of history, and 3 to 4 units of foreign language.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

Two Years		Credits
<b>1st Semester</b>		
<sup>1</sup> CST	110 Intro. to Communication or	3
ENG	111 College Composition I	3
<sup>2</sup> —	101 Foreign Language or ASL or General Education Elective	3–4
<sup>3</sup> MTH	154 Quantitative Reasoning	3
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>13–14</b>
<b>2nd Semester</b>		
<sup>4</sup> ENG	112 College Composition II	3
<sup>1</sup> —	102 Foreign Language or ASL or General Education Elective	3–4
<sup>3</sup> MTH	245 Statistics I	3
<sup>5</sup> —	Physical or Life Science Elective w/Lab	4
	<b>Total</b>	<b>13–14</b>
<b>3rd Semester</b>		
<sup>6</sup> ENG	Literature Elective	3
<sup>1</sup> —	201 Foreign Language or ASL	3
<sup>7</sup> HIS	Elective	3
<sup>5</sup> —	Physical or Life Science Elective w/Lab	4
<sup>8</sup> —	Social Science Elective	3
	<b>Total</b>	<b>16</b>
<b>4th Semester</b>		
<sup>1</sup> —	202 Foreign Language or ASL	3
<sup>9</sup> —	General Elective	3–6
<sup>7</sup> HIS	Elective	3
<sup>10</sup> —	Humanities/Fine Arts Elective	3
<sup>8</sup> —	Social Science Elective	3
	<b>Total</b>	<b>15–18</b>

**Total credits for the A.A. Degree in Liberal Arts = 60-62**

- Select from the following: CST 100, CST 110, CST 126, or CST 229.
- Students completing the A.A. in Liberal Arts must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Depending on the foreign language chosen for study, credits will vary in the Beginning levels between 3-5 credits and in the Intermediate levels between 3-4 credits. Placement testing determines initial foreign language level. Students who place directly into intermediate level foreign language or ASL may take any transfer-oriented course to meet the credit requirement. Students completing the equivalent of the 101-102 sequence in foreign language may use those credits to meet General Education Elective requirements. Waivers or credit by exam for previous experience is available for some languages [[http://www.nvcc.edu/prior-learning/\\_docs/cpl-manual-spring-2018.pdf](http://www.nvcc.edu/prior-learning/_docs/cpl-manual-spring-2018.pdf)]. Students whose native language is not English may substitute General Education Electives for foreign language upon the approval of the advising academic dean. Students must take sufficient General Education Elective courses so that they can apply at least 60 credits toward the Liberal Arts degree.
- May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264..
- May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- Any 200-level literature course with an ENG prefix satisfies this requirement.
- See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101–102 or HIS 121–122 are recommended.
- See social/behavioral science courses listed under General Education Electives.
- Consult an advisor for assistance in selecting general electives

that will meet the requirements of the transfer institution. In most cases, general electives should be selected from the approved courses listed under General Education Electives. In the fourth semester, more than 3 credits in general electives are required of students whose Foreign Language/ASL 101/102 total less than 10 credits.

<sup>10</sup> See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

## Liberal Arts: Art History Specialization

### Associate of Arts Degree

Offered through AL, AN, LO, MA, WO

**Purpose:** This program is designed for students who plan to transfer to a college or university for a Bachelor of Arts in Art History.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

Two Years		Credits
<b>1st Semester</b>		
ART	101 History and Appreciation of Art I	3
ENG	111 College Composition I	3
<sup>1</sup> —	101 Foreign Language or ASL or General Education Elective	3–4
<sup>2</sup> MTH	154 Quantitative Reasoning	3
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>13–14</b>
<b>2nd Semester</b>		
ART	102 History and Appreciation of Art II	3
<sup>3</sup> CST	110 Intro. to Communication	3
<sup>4</sup> ENG	112 College Composition II	3
<sup>1</sup> —	102 Foreign Language or ASL or General Education Elective	3–4
<sup>2</sup> MTH	245 Statistics I	3
	<b>Total</b>	<b>15–16</b>
<b>3rd Semester</b>		
<sup>5</sup> ART	211 History of American Art I or Art History Elective	3
<sup>6</sup> ENG	200-Level Literature Elective	3
<sup>1</sup> —	201 Foreign Language or ASL	3
<sup>7</sup> —	Physical or Life Science Elective w/Lab	4
<sup>8</sup> —	Social Science Elective	3
	<b>Total</b>	<b>16</b>
<b>4th Semester</b>		
<sup>9</sup> HIS	Elective	3
<sup>10</sup> —	Humanities/Fine Arts Elective	3
<sup>1</sup> —	202 Foreign Language or ASL	3
<sup>7</sup> —	Physical or Life Science Elective w/Lab	4
<sup>8</sup> —	Social Science Elective	3
	<b>Total</b>	<b>16</b>

**Total credits for the A.A. Degree in Liberal Arts with a Specialization in Art History = 60–62**

- Students completing the A.A. in Liberal Arts must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Depending on the foreign language chosen for study, credits will vary in the Beginning levels between 3-5 credits and in the Intermediate levels between 3-4 credits. Placement testing determines initial foreign language level.

Students who place directly into intermediate level foreign language or ASL may take any transfer-oriented course to meet the credit requirement. Students completing the equivalent of the 101-102 sequence in foreign language may use those credits to meet General Education Elective requirements.

Waivers or credit by exam for previous experience is available for some languages [http://www.nvcc.edu/prior-learning/\_docs/cpl-manual-spring-2018.pdf]. Students whose native language is not English may substitute General Education Electives for foreign language upon the approval of the advising academic dean.

- 2 May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 262 and MTH 264.
- 3 Select from the following: CST 100, CST 110, CST 126, or CST 229.
- 4 May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- 5 Select from ART 103–104, ART 250, or other elective approved by the ART division.
- 6 Any 200-level literature course with an ENG prefix satisfies this requirement.
- 7 See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- 8 See social/behavioral science courses listed under General Education Electives.
- 9 See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101–102 or HIS 121–122 are recommended.
- 10 See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution. This elective is not required if Foreign Language 101/102 total 10 credits.

## Liberal Arts: Communication Studies Specialization

Associate of Arts Degree

Offered through AL, AN, LO, MA, NOVA Online, WO

**Purpose:** This program is designed for students who wish to study speech communication at the college level or who wish to transfer to a four-year institution for a baccalaureate degree.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

Two Years		Credits
<b>1st Semester</b>		
	ENG 111 College Composition I	3
1	___ 101 Foreign Language or ASL or General Education Elective	3–4
2	___ Humanities/Fine Arts Elective	3
3	MTH 154 Quantitative Reasoning	3
	SDV 100 College Success Skills	1
	<b>Total</b>	<b>13–14</b>
<b>2nd Semester</b>		
4	CST Elective	3
5	ENG 112 College Composition II	3
1	___ 102 Foreign Language or ASL or General Education Elective	4
3	MTH 245 Statistics I	3
6	___ Social Science Elective	3
	<b>Total</b>	<b>15–16</b>

3rd Semester		Credits
4	CST Elective	3
7	ENG 200-Level Literature Elective	3
1	___ 201 Foreign Language or ASL	3
8	HIS Elective	3
9	___ Physical or Life Science Elective w/Lab	4
	<b>Total</b>	<b>16</b>

4th Semester		Credits
4	CST 126 Interpersonal Communication	3
1	___ 202 Foreign Language ASL	3
8	HIS Elective	3
9	___ Physical or Life Science Elective w/Lab	4
6	___ Social Science Elective	3
	<b>Total</b>	<b>16</b>

### Total credits for the A.A. Degree in Liberal Arts with a Specialization in Communication Studies = 60–62

- 1 Students completing the A.A. in Liberal Arts must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Depending on the foreign language chosen for study, credits will vary in the Beginning levels between 3-5 credits and in the Intermediate levels between 3-4 credits. Placement testing determines initial foreign language level. Students who place directly into intermediate level foreign language or ASL may take any transfer-oriented course to meet the credit requirement. Students completing the equivalent of the 101-102 sequence in foreign language may use those credits to meet General Education Elective requirements. Waivers or credit by exam for previous experience is available for some languages [http://www.nvcc.edu/prior-learning/\_docs/cpl-manual-spring-2018.pdf]. Students whose native language is not English may substitute General Education Electives for foreign language upon the approval of the advising academic dean.
- 2 See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
- 3 May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.4 Select from the following: CST 100, CST 110, CST 126, or CST 229.
- 5 May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- 6 See social/behavioral science courses listed under General Education Electives.
- 7 Any 200-level literature course with an ENG prefix satisfies this requirement.
- 8 See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101–102 or HIS 121–122 are recommended. A second HIS elective is not required of students whose Foreign Language 101/102 total 10 credits.
- 9 See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.

## Liberal Arts: English Specialization

Associate of Arts Degree

Offered through AL, AN, LO, MA, WO

**Purpose:** This program is designed for students who plan to transfer to a college or university for a Bachelor of Arts or a Bachelor of Science in English, Creative Writing or Writing and/or Rhetoric as an entry-level professional writer.

**Transfer Information:** Students are advised to work closely with the English faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

**Recommended Preparation:** Satisfactory completion of high school units or equivalent: 4 units of English, 2 units of Mathematics (Algebra and Geometry), 2 units of Laboratory Science, 1 unit of History, and 3 to 4 units of World Languages.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
<sup>1</sup> ___	101 Foreign Language or ASL or General Education Elective	3-4
<sup>2</sup> MTH	154 Quantitative Reasoning	3
<sup>3</sup> ___	Physical or Life Science Elective w/Lab	4
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>14-15</b>
<b>2nd Semester</b>		
<sup>4</sup> ENG	112 College Composition II	3
<sup>1</sup> ___	102 Foreign Language or ASL or General Education Elective	3-4
<sup>2</sup> MTH	245 Statistics I	3
<sup>3</sup> ___	Physical or Life Science Elective w/Lab	4
<sup>5</sup> ___	Social Science Elective	3
	<b>Total</b>	<b>16-17</b>
<b>3rd Semester</b>		
<sup>6</sup> CST	110 Intro. to Communication	3
<sup>7</sup> ENG	200-Level Elective	3
<sup>1</sup> ___	201 Foreign Language or ASL	3-4
<sup>8</sup> HIS	Elective	3
<sup>5</sup> ___	Social Science Elective	3
	<b>Total</b>	<b>15-16</b>
<b>4th Semester</b>		
<sup>9</sup> ENG	200-Level Elective	3
<sup>10</sup> ENG	Literature Elective	3
<sup>1</sup> ___	202 Foreign Language or ASL	3-4
<sup>11</sup> ___	General Education Elective	3
<sup>12</sup> ___	Humanities/Fine Arts Elective	3
	<b>Total</b>	<b>15-16</b>

**Total credits for the A.A. Degree in Liberal Arts with a Specialization in English = 60-62**

- <sup>1</sup> SStudents completing the A.A. in Liberal Arts must demonstrate intermediate college-level (201-202) proficiency in a language other than English. The 201-202 courses require a prerequisite proficiency equivalent to the 101-102 sequence in the language. Depending on the foreign language chosen for study, credits will vary in the Beginning levels between 3-5 credits and in the Intermediate levels between 3-4 credits. Placement testing determines initial foreign language level. Students who place directly into intermediate level foreign language or ASL may take any transfer-oriented course to meet the credit requirement. Students completing the equivalent of the 101-102 sequence in foreign language may use those credits to meet General Education Elective requirements. Waivers or credit by exam for previous experience is available for some languages [[http://www.nvcc.edu/prior-learning/\\_docs/cpl-manual-spring-2018.pdf](http://www.nvcc.edu/prior-learning/_docs/cpl-manual-spring-2018.pdf)]. Students whose native language is not English may substitute General Education Electives for foreign language upon the approval of the advising academic dean.
- <sup>2</sup> May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.

- <sup>3</sup> See biology, chemistry, ENV 121-122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>4</sup> May substitute ENG 114 or ENG 125.
- <sup>5</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>6</sup> Select from the following: CST 100, CST 110, CST 126, or CST 229.
- <sup>7</sup> Students who are interested in Literature: select from ENG 230, ENG 236, ENG 237, ENG 241, ENG 242, ENG 243, ENG 244, ENG 250, ENG 251, ENG 252, ENG 253, ENG 256, ENG 257, ENG 258, ENG 271, and ENG 279. Students who are interested in Creative Writing: select ENG 211. Students who are interested in Writing and Rhetoric: select ENG 210.
- <sup>8</sup> See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101-102 or HIS 121-122 are recommended.
- <sup>9</sup> Students who are interested in Literature: select from ENG 230, 236, 237, 241, 242, 243, 244, 250, 251, 252, 253, 256, 257, 258, 270, 271, and 279. Students who are interested in Creative Writing: select ENG 212, ENG 215, ENG 216, ENG 217, ENG 218, ENG 219, ENG 261, or 262. Students who are in Writing and Rhetoric, select from ENG 200, 205, 221, 222 or 280.
- <sup>10</sup> Any 200-level literature course with an ENG prefix satisfies this requirement.
- <sup>11</sup> See courses listed under General Education Electives. This General Education elective is not required of students whose World Language 101/102 total 10 credits.
- <sup>12</sup> See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution

## Liberal Arts: International Studies Specialization

Associate of Arts Degree

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** This program is designed to prepare students who intend to transfer to a four-year institution to complete a bachelor's degree in international studies. This specialization will broaden the student's education to include more emphasis on other cultures and countries in recognition of the increasing interdependence of today's world.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

1st Semester		Credits
ENG	111 College Composition I	3
<sup>1</sup> ___	101 Foreign Language or ASL or General Education Elective or	3-4
<sup>2</sup> MTH	154 Quantitative Reasoning	3
<sup>3</sup> ___	Physical or Life Science Elective w/Lab	4
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>14-15</b>

2nd Semester			
4	ENG	112 College Composition II	3
1	—	102 Foreign Language or ASL or General Education Elective	3–4
5	HIS	Elective	3
2	MTH	245 Statistics I	3
6	CST	229 Intercultural Communication	3
<b>Total</b>			<b>15–16</b>

3rd Semester			
	ECO	201 Principles of Economics I	3
7	ENG	Literature Elective	3
1	—	201 Foreign Language or ASL	3
3	—	Physical or Life Science Elective w/Lab	3
8	—	Non-Western Requirement	4
<b>Total</b>			<b>16</b>

4th Semester			
	ECO	202 Principles of Economics II	3
1	—	202 Foreign Language or ASL	3
9	—	General Education Elective	3
10	—	Humanities/Fine Arts Elective	3
8	—	Non-Western Requirement	3
<b>Total</b>			<b>15</b>

**Total credits for the A.A. Degree in Liberal Arts with a Specialization in International Studies = 60–62**

- Students completing the A.A. in Liberal Arts must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Depending on the foreign language chosen for study, credits will vary in the Beginning levels between 3–5 credits and in the Intermediate levels between 3–4 credits. Placement testing determines initial foreign language level. Students who place directly into intermediate level foreign language or ASL may take any transfer-oriented course to meet the credit requirement. Students completing the equivalent of the 101–102 sequence in foreign language may use those credits to meet General Education Elective requirements. Waivers or credit by exam for previous experience is available for some languages [[http://www.nvcc.edu/prior-learning/\\_docs/cpl-manual-spring-2018.pdf](http://www.nvcc.edu/prior-learning/_docs/cpl-manual-spring-2018.pdf)]. Students whose native language is not English may substitute General Education Electives for foreign language upon the approval of the advising academic dean.
- May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
- See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101–102 or HIS 111–112 are recommended.
- Select from the following: CST 100, CST 110, CST 126, or CST 229.
- Any 200-level literature course with an ENG prefix satisfies this requirement.
- Select from ART 103, HIS 203, HIS 231–232, HIS 241, HIS 251, HIS 253–254, HIS 255, HIS 256, or REL 231–232, or other non-Western courses approved by advisor.
- Social science or humanities recommended. Suggested courses include HUM 201–202, HUM 231–232, or advanced language courses in history, literature, or civilization above the 202 designation (example: SPA 233–234). Consult an advisor. This General Education elective is not required of students whose Foreign Language 101/102 total 10 credits.
- See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

## Liberal Arts: Theatre

### Career Studies Certificate

Offered through AL, AN, LO, MA, WO

**Purpose:** This program is designed to meet the needs of individuals seeking to further develop skills in acting, directing, arts management, technical theatre, and theatre scholarship. It extends theatre opportunities outside of the classroom and into community, educational, and professional theatres.

One Year		Credits
1st Semester		
CST	110 Intro. to Communication or CST 100 Principles of Public Speaking	3
CST	130 Intro. to Theatre or CST 141 Theatre Appreciation	3
CST	131 Acting I	3
<b>Total</b>		<b>9</b>
2nd Semester		
CST	136 Theatre Workshop	3
1	CST Elective	3
1	CST Elective	3
<b>Total</b>		<b>9</b>

**Total credits for the Theatre Career Studies Certificate = 18**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

- Choose from the following: CST 111, CST 132, CST 195 Topics in: Playwriting/Screenwriting, CST 195 Topics in: Technical Theatre, CST 241, CST 251, CST 267, CST 299.

## Marketing

### Associate of Applied Science Degree

Offered through AN

**Purpose:** The curriculum is designed for persons who seek full-time employment in areas involving the marketing and distribution of goods and for those presently in these fields who are seeking promotion. Job opportunities include store manager, assistant manager, sales supervisor, department manager, sales and customer service representative, buyer and assistant buyer, promotion specialist, public relations coordinator, advertising account manager, media buyer, marketing research technician, international wholesaler, social media marketing specialist, and human resource manager.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.



**Recommended Preparation:** The student should possess a proficiency in high school English and a strong background in basic arithmetic operations.

Two Years		Credits
<b>1st Semester</b>		
BUS	100 Intro. to Business	3
<sup>1</sup> ECO	120 Survey of Economics	3
ENG	111 College Composition I	3
ITE	115 Intro. to Computer Applications and Concepts	3
MTH	154 Quantitative Reasoning	3
SDV	100 College Success Skills or any other SDV	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
BUS	200 Principles of Management	3
BUS	241 Business Law or BUS Elective	3
<sup>2</sup> ENG	112 College Composition II	3
MKT	201 Intro. to Marketing	3
MKT	282 Principles of E-Commerce	3
	<b>Total</b>	<b>15</b>
<b>3rd Semester</b>		
BUS	201 Organizational Behavior or BUS Elective	3
MKT	221 Public Relations	3
MKT	228 Promotion	3
MKT	284 Social Media Marketing	3
<sup>3</sup> —	Social Science Elective	3
	<b>Total</b>	<b>15</b>
<b>4th Semester</b>		
BUS	205 Human Resource Management or BUS Elective	3
BUS	280 Introduction to International Business	3
<sup>4</sup> CST	110 Intro. to Communication	3
<sup>5</sup> —	Humanities/Fine Arts Elective	3
MKT	215 Sales and Marketing Management	3
	<b>Total</b>	<b>15</b>

**Total credits for the A.A.S. Degree in Marketing = 61**

Students are encouraged to participate in the Cooperative Education Program for special career-related work experience.

- <sup>1</sup> Students considering transfer may take ECO 201 or ECO 202 after consulting with an academic advisor.
- <sup>2</sup> May substitute ENG 116 or ENG 125 with the advice of a counselor or academic advisor.
- <sup>3</sup> See economics, geography, history, political science, psychology, or sociology (including anthropology) courses listed under General Education Electives.
- <sup>4</sup> May substitute CST 100, CST 115, CST 126, CST 227 or, CST 229..
- <sup>5</sup> See humanities/fine arts courses listed under General Education Electives.

## Marketing Career Studies Certificate

Offered through AN

**Purpose:** The curriculum is designed to offer students already employed in marketing, sales, and promotion the opportunity for improving skills and advancement on the job. For students interested in exploring marketing as a career, this certificate is designed to acquaint students with the fundamental skills.

**Recommended Preparation:** Students should possess a proficiency in high school English and a strong background in basic arithmetic operations.

One Year		Credits
<b>1st Semester</b>		
ENG	111 College Composition I or ENG Elective	3
ITE	115 Intro. to Computer Applications and Concepts	3
MKT	201 Intro. to Marketing	3
MKT	228 Promotion or MKT 221 Public Relations	3
SDV	100 College Success Skills or any other SDV	1
	<b>Total</b>	<b>13</b>
<b>2nd Semester</b>		
MKT	215 Sales and Marketing Management	3
MKT	282 Principle of eCommerce or BUS 280 Introduction to International Business	3
	<b>Total</b>	<b>6</b>

**Total credits for the Marketing Career Studies Certificate = 19**

## Marketing: Social Media Career Studies Certificate

Offered through AN, ELI

**Purpose:** This program is designed to offer students already employed in marketing the opportunity to improve and update their skills, allowing for advancement on the job. Interested students will have an opportunity to explore e-commerce as a career and become acquainted with fundamental skills.

**Recommended Preparation:** Students should possess a proficiency in high school English.

One Year		Credits
<b>1st Semester</b>		
ENG	111 College Composition I or ENG Elective	3
ITE	115 Intro. to Computer Applications and Concepts or CSC 110 Introduction to Computing	3
MKT	201 Intro. to Marketing	3
SDV	100 College Success Skills or any other SDV	1
	<b>Total</b>	<b>10</b>
<b>2nd Semester</b>		
MKT	282 Principles of E-Commerce	3
MKT	284 Social Media Marketing	3
	<b>Total</b>	<b>6</b>

**Total credits for the Social Media Career Studies Certificate = 16**

## Marketing: Promotion and Public Relations

Career Studies Certificate

Offered through AN, ELI

**Purpose:** This program is designed to offer students already employed in promotion and public relations the opportunity to improve and update their skills, allowing for advancement on the job. Interested students will have an opportunity to explore this field as a career and become acquainted with fundamental skills.

**Recommended Preparation:** The student should possess a proficiency in high school English.

One Year		Credits
1st Semester		
ENG	111 College Composition I	3
ITE	115 Intro. to Computer Applications and Concepts or CSC 110 Introduction to Computing	3
MKT	201 Intro. to Marketing	3
SDV	100 College Success Skills or any other SDV	1
<b>Total</b>		<b>10</b>

2nd Semester		
ENG	116 Writing for Business or ENG Elective	3
MKT	221 Public Relations	3
MKT	228 Promotion	3
<b>Total</b>		<b>9</b>

**Total credits for the Promotion and Public Relations Career Studies Certificate = 19**

## Marketing: Marketing Management Career Studies Certificate

Offered through AN

**Purpose:** This curriculum is designed to offer students already employed in marketing management the opportunity for improving skills and advancement on the job. For students interested in exploring marketing management as a career, this certificate program is designed to acquaint students with the fundamental skills.

**Recommended Preparation:** Students should possess a proficiency in high school English and a strong background in arithmetic operations.

One Year		Credits
1st Semester		
ENG	111 College Composition I or ENG Elective	3
MKT	201 Intro. to Marketing	3
MKT	216 Retail Organization and Management	3
SDV	100 College Success Skills or any other SDV	1
<b>Total</b>		<b>10</b>

2nd Semester		
BUS	200 Principles of Management or BUS Elective	3
ITE	115 Intro. to Computer Applications and Concepts or CSC 110 Introduction to Computing	3
<b>Total</b>		<b>6</b>

**Total credits for the Marketing Management Career Studies Certificate = 16**

## Medical Laboratory Technology A.A.S.

See Medical Education section

## Meeting, Event, and Exhibition Management Certificate

See Hospitality Management

## Music

### Associate of Arts Degree

Offered through AL, AN, LO

**Purpose:** This curriculum offers an emphasis in fine arts. The program may be used by students who wish to transfer to a four-year college or university to complete the Bachelor of Arts in Music.

**Recommended Preparation:** An interview with the music faculty may be required before beginning the program.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

**Special Curriculum Completion Requirements:** Applied music students: Tuition and studio fees are payable to the College. Applied proficiency requirements must be met in order for students to advance to the 200-level of applied music courses. Piano proficiency skills are required of all music majors.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
<sup>1</sup> ___	201 Foreign Language	3
<sup>2</sup> ___	General Elective	1
MUS	Applied Music (Major)	2
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	111 Music Theory I	4
SDV	100 College Success Skills	1
<b>Total</b>		<b>15</b>

2nd Semester		
<sup>3</sup> ENG	112 College Composition II	3
<sup>1</sup> ___	202 Foreign Language	3
MTH	154 Quantitative Reasoning	3
MUS	Applied Music (Major)	2
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	112 Music Theory II	4
<b>Total</b>		<b>16</b>

3rd Semester		
MTH	245 Statistics I	3
MUS	Chorus/Band/Orchestra/Ensemble	1
<sup>2</sup> ___	General Elective	1
<sup>4</sup> ___	Physical or Life Science Elective w/Lab	4
<sup>5</sup> ___	Social Science Electives	6
<b>Total</b>		<b>15</b>

4th Semester		
CST	110 Intro. to Communication	3
MUS	Chorus/Band/Orchestra/Ensemble	1
<sup>4</sup> ___	Physical or Life Science Elective w/Lab	4
<sup>5</sup> ___	Social Science Electives	6
<b>Total</b>		<b>14</b>

**Total credits for the A.A. Degree in Music = 60**

- <sup>1</sup> Students completing the A.A. in Music must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Placement testing determines initial foreign language level. Students completing 101–102 foreign language may use those credits to meet general elective requirements. Waivers or credit by exam (through CLEP) for previous experience is available for some languages. Students whose native language is not English may substitute general electives for foreign language upon the approval of the advising academic dean.
- <sup>2</sup> Students who need to take the beginning level of foreign language may apply that credit toward the general elective. Other students may take any transfer-oriented course.
- <sup>3</sup> May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- <sup>4</sup> See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>5</sup> See social/behavioral science courses listed under General Education Electives.

## Music

### Associate of Applied Arts Degree

Offered through AL, AN, LO

**Purpose:** This curriculum is designed for students who seek employment in the performing arts field. The degree offers a major in music and a specialization in jazz/popular music. Each program has a common first year.

**Transfer Information:** Transfer is not the primary purpose of an A.A.A. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Recommended Preparation:** An interview with the music faculty may be required before beginning the program.

**Special Curriculum Completion Requirements:** Applied music students: Tuition and studio fees are payable to the College. Applied proficiency requirements must be met in order for students to advance to the 200-level of applied music courses. Piano proficiency skills are required of all music majors.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
MUS	Applied Music (major)	2
<sup>1</sup> MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	111 Music Theory I	4
<sup>2</sup> PED	116 Lifetime Fitness and Wellness	1
<sup>3</sup> —	Social Science Elective	3
<sup>4</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>16</b>

2nd Semester		
ENG	112 College Composition II	3
MTH	154 Quantitative Reasoning	3
MUS	Applied Music (major)	2
<sup>1</sup> MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	112 Music Theory II	4
<sup>2</sup> PED/RPK	Elective	1
<sup>3</sup> —	Social Science Elective	3
	<b>Total</b>	<b>18</b>

3rd Semester		
—	General Elective	3
MUS	Applied Music (major)	2
<sup>1</sup> MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	211 Advanced Music Theory I	4
MUS	221 History of Music I	3
	<b>Total</b>	<b>14</b>

4th Semester		
CST	110 Intro. to Communication	3
<sup>5</sup> —	Humanities/Fine Arts Elective	3
MUS	Applied Music (major)	2
<sup>1</sup> MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	212 Advanced Music Theory II	4
MUS	222 History of Music II	3
	<b>Total</b>	<b>17</b>

**Total credits for the A.A.A. Degree in Music = 65**

- <sup>1</sup> Class instruction such as Class Voice or Class Piano may be substituted.
- <sup>2</sup> The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 116, 1 cr. plus a PED activities course, 1 cr.; or PED 116, 1 cr. plus RPK activities course. PED 116 is offered as both a 1-credit and a 2-credit course.
- <sup>3</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>4</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>5</sup> See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

## Music: Jazz/Popular Music Specialization

### Associate of Applied Arts Degree

Offered through AL, AN, LO

**Purpose:** This program is designed for students who seek employment performing jazz and popular music.

**Transfer Information:** Transfer is not the primary purpose of an A.A.A. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Recommended Preparation:** An interview with the music faculty may be required before beginning the program.

**Special Curriculum Completion Requirements:** Applied music students: Tuition and studio fees are payable to the College. Applied proficiency requirements must be met in order for students to advance to the 200-level of applied music courses. Piano proficiency skills are required of all music majors.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
MUS	Applied Music (major)	2
<sup>1</sup> MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	111 Music Theory I	4
<sup>2</sup> PED	116 Lifetime Fitness and Wellness	1
<sup>3</sup> —	Social Science Elective	3
<sup>4</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
ENG	112 College Composition II	3
MTH	154 Quantitative Reasoning	3
MUS	Applied Music (major)	2
<sup>1</sup> MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	112 Music Theory II	4
<sup>2</sup> PED/RPK	Elective	1
<sup>3</sup> —	Social Science Elective	3
	<b>Total</b>	<b>18</b>
<b>3rd Semester</b>		
CST	110 Intro. to Communication	3
—	General Elective	2
MUS	Applied Music (major)	2
<sup>1</sup> MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	159 Improvisational Techniques	3
MUS	213 Composition I	3
	<b>Total</b>	<b>15</b>
<b>4th Semester</b>		
<sup>5</sup> —	Humanities/Fine Arts Elective	3
MUS	Applied Music (major)	2
<sup>1</sup> MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	214 Composition II	3
MUS	225 The History of Jazz	3
MUS	259 Advanced Improvisational Techniques	3
	<b>Total</b>	<b>16</b>

**Total credits for the A.A. Degree in Music with a Specialization in Jazz/Popular Music = 65**

- <sup>1</sup> Class instruction such as Class Voice or Class Piano may be substituted.
- <sup>2</sup> The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 116, 1 cr. plus a PED activities course, 1 cr.; or PED 116, 1 cr. plus RPK activities course. PED 116 is offered as both a 1-credit and a 2-credit course.
- <sup>3</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>4</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>5</sup> See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

## Music Recording Technology

Certificate

Offered through LO

**Purpose:** This curriculum is designed for individuals who wish to set up their own studio or seek employment as music recording technicians. Occupational objectives include development for positions as assistants and aides in recording studios, broadcast studios, myriad other recording enterprises, and countless private studios in the recording industry. Training in digital audio is emphasized using industry standard software.

**Recommended Preparation:** A personal interview with a program faculty member.

One Year		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
MTH	154 Quantitative Reasoning	3
MUS	130 Overview of the Recording Industry	1
MUS	140 Intro. to Recording Technology	3
MUS	157 Sound Studio Design	3
MUS	158 Recording Studio Electronics: Theory and Maintenance	3
<sup>1</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>17</b>
<b>2nd Semester</b>		
BUS	165 Small Business Management	3
<sup>2</sup> CST	Elective	3
MUS	179 Music Copyright Law	1
MUS	227 Editing and Mixdown Technology	3
MUS	235 Advanced Recording Technology	3
MUS	288 Recording Problems Seminar	2
PSY	120 Human Relations	3
	<b>Total</b>	<b>18</b>
<b>3rd Semester</b>		
MUS	290 Coordinated Internship	3
	<b>Total</b>	<b>3</b>

**Total credits for the Music Recording Technology Certificate = 38**

- <sup>1</sup> May take SDV 100 or the SDV 101 Orientation section related to their particular program.
- <sup>2</sup> Select from the following: CST 110, CST 115, CST 126, CST 227, and CST 229.

## Nursing A.A.S.

See Medical Education section

## Paralegal Studies

Associate of Applied Science Degree

Offered through AL

**Purpose:** The curriculum is designed to provide an individual with a sufficient level of knowledge, understanding, and proficiency to perform the tasks associated with meeting a client's needs. These tasks can be performed by a trained, non-lawyer assistant working under the direction and supervision of a lawyer. A paralegal or legal assistant will have a basic understanding of the general processes of American law, along with the knowledge and

proficiency required to perform specific tasks under the supervision of a lawyer in the fields of civil and criminal law. Occupational objectives include employment in corporate law firms, government agencies, and any of the varied law-related fields. Paralegals or legal assistants are prohibited by law from offering legal services directly to members of the public.

**Advising Note:** It is strongly recommended that students meet with an advisor before enrolling in classes or as early as possible in their first semester of enrollment.

**Completion Requirements:** To remain in the program, students must complete each of the legal specialty (LGL) courses in the program with a “C” or higher. Students must complete LGL 110 Introduction to Law and the Legal Assistant during their first semester of enrollment and complete the other legal specialty (LGL) courses in the order outlined. Course substitutions are made on a case-by-case basis. In all cases, the grade for substituted courses must be a “C” or higher.

**Special Approval Status:** The Paralegal Studies Program is approved by the American Bar Association.

**Transfer from Other Institutions:** Students must complete 25 percent (17 credits) of their coursework at NOVA. Program guidelines require that at least 50 percent of legal specialty (LGL) credits be completed at NOVA. In addition, ABA guidelines require that at least 10 of those credits be taken in traditional (face-to-face) format. The Paralegal Studies Program accepts the transfer of legal specialty courses completed at other institutions as long as those institutions are regionally accredited and the program director determines that the course objectives and practical skills are comparable to the courses offered in NOVA’s Paralegal Studies Program. In all cases, the grade for transfer courses must be a “C” or higher.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
LGL	110 Intro. to Law and the Legal Assistant	3
LGL	117 Family Law	3
LGL	125 Legal Research	3
<sup>1</sup> PHI	115 Practical Reasoning	3
<sup>2</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
ENG	112 College Composition II	3
LGL	126 Legal Writing	3
LGL	215 Torts	3
LGL	218 Criminal Law	3
<sup>3</sup> MTH	154 Quantitative Reasoning	3
	<b>Total</b>	<b>15</b>

3rd Semester		Credits
<sup>4</sup> —	Approved Elective	3
ITE	115 Intro. to Computer Applications and Concepts	3
LGL	115 Real Estate Law	3
LGL	217 Trial Practice and the Law of Evidence	3
LGL	235 Legal Aspects of Business Organization	3
PSY	200 Principles of Psychology I or SOC 200 Principles of Sociology I	3
	<b>Total</b>	<b>18</b>

4th Semester		Credits
<sup>4</sup> —	Approved Elective	2
CST	110 Intro. to Communication	3
LGL	225 Estate Planning and Probate	3
LGL	230 Legal Transactions	3
—	Social Science Elective	3
	<b>Total</b>	<b>14</b>

**Total credits for the A.A.S. Degree in Paralegal Studies = 63 (includes 3 prerequisite credits)**

- May substitute a humanities/fine arts elective selected from the humanities/fine arts courses listed under General Education Electives. Humanities/fine arts course may be substituted after consultation with an academic advisor and should be chosen to further a student’s career and educational goals.
- May substitute the SDV 101 Orientation section related to this program.
- May substitute any higher-level mathematics course or a science course (BIO, CHM, ENV, GOL, NAS, PHY).
- Elective courses should be selected after consultation with a counselor or academic advisor, and should be chosen to further a student’s career and educational goals.
- May substitute a social science elective selected from the social/behavioral science courses listed under General Education Electives.

## Personal Training

### Career Studies Certificate

Offered through AL, AN, LO, MA, WO

**Purpose:** This program is based on the standards of the American Council on Exercise (ACE) and prepares students to become knowledgeable fitness professionals in health clubs, recreation departments, and fitness facilities in private, commercial, corporate, or government settings. Emphasis is placed on preparing students to sit for a nationally recognized certification exam in Personal Training.

**Recommended Preparation:** Students are expected to attain high levels of fitness during this program and, consequently, should be in good health to participate in vigorous workouts.

**Special Admission Information:** No classes will be waived without permission of a Personal Training advisor.

**Completion Requirements:** The following must be met to obtain the Personal Training Studies Certificate:

- Achieve a grade of “C” or better in all certificate courses
- Score 80% or higher on the exit exam
- Hold a current CPR certification



One Year		Credits	Two Years		Credits
<b>1st Semester</b>					
<sup>1</sup> HLT	105 Cardiopulmonary Resuscitation or a current CPR card	1	ART	121 Drawing I or ART 131 Fundamentals of Design I	3
<sup>2</sup> CST	110 Introduction to Communication	3	ENG	111 College Composition I	3
PED	111 Weight Training I	1	___	General Elective	3
<sup>3</sup> ___	116 Lifetime Fitness and Wellness or HLT 110 Concepts of Personal & Community Health	2-3	<sup>1</sup> PED	116 Lifetime Fitness and Wellness	1
<sup>4</sup> ___	BUS, FIN, or MKT Elective	3	PHT	101 Photography I	3
<sup>5</sup> BIO	141 Human Anatomy and Physiology I	4	PHT	110 History of Photography	3
	<b>Total</b>	<b>14-15</b>	<sup>2</sup> SDV	100 College Success Skills	1
			<b>Total</b>	<b>Total</b>	<b>17</b>

2nd Semester		
<sup>6</sup> PED	Elective	1
HLT	206 Exercise Science	3
DIT	121 Nutrition I	3
PED	168 Basic Personal Trainer Preparation	3
<sup>7</sup> PED	220 Adult Health and Development	2-3
	<b>Total</b>	<b>12-13</b>

**Total credits for the Personal Training Career Studies Certificate = 26-28**

- <sup>1</sup> HLT 105 requirement may be met with proof of current certification in CPR through a recognized organization such as the American Heart Association or the American Red Cross.
- <sup>2</sup> May substitute CST 126, or CST 229.
- <sup>3</sup> HLT 110 is recommended for transfer to George Mason University
- <sup>4</sup> Approved Courses: BUS 100, BUS 116, BUS 165, BUS 201, FIN 107, MKT 215
- <sup>5</sup> BIO 142 is recommended in addition to BIO 141 for transfer into a 4-year program and for students interested in a more thorough understanding of the systems of the human body
- <sup>6</sup> Approved PED Electives: PED 100, PED 103, PED 109
- <sup>7</sup> PED 190 Coordinated Internship (2 cr.) may be substituted with approval of a Personal Training advisor.

## Phlebotomy Career Studies Certificate

See Medical Education section under Medical Laboratory Technology

## Photography and Media

Associate of Applied Science Degree

Offered through AL

**Purpose:** The curriculum is designed to prepare students for diverse career options within the field of photography and digital imaging. Coursework will stress both technical and aesthetic elements, enabling students to solve a wide range of visual problems with imagination and originality.

**Recommended Preparation:** Proficiency in high school English, basic computer skills, and satisfactory aptitude in visual art.

**Equipment and Supplies:** Photography students are required to purchase certain basic equipment and materials necessary to achieve professionally oriented objectives. Most of the equipment is purchased in the first photography class and can be used throughout the two-year program.

2nd Semester		
ART	101 History and Appreciation of Art I	3
ART	122 Drawing II or ART 132 Fundamentals of Design II	3
CST	110 Intro. to Communication	3
<sup>1</sup> PED/ RPK	Elective	1
PHT	102 Photography II	3
PHT	270 Digital Imaging I	3
	<b>Total</b>	<b>16</b>

3rd Semester		
ART	102 History and Appreciation of Art II	3
<sup>3</sup> MTH	154 Quantitative Reasoning or Physical or Life Science Elective w/Lab	3-4
PHT	130 Video I	3
PHT	201 Advanced Photography I	3
<sup>4</sup> ___	Social Science Elective or PHT Elective	3
	<b>Total</b>	<b>15-16</b>

4th Semester		
PHT	202 Advanced Photography II	3
PHT	227 Photographic Careers	3
PHT	Electives	6
___	Social Science Elective	3
	<b>Total</b>	<b>15</b>

**Total credits for the A.A.S. Degree in Photography and Media = 63-64**

- <sup>1</sup> The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 116, 1 cr. plus a PED activities course, 1 cr.; or PED 116, 1 cr. plus RPK activities course. PED 116 is offered as both a 1-credit and a 2-credit course.
- <sup>2</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>3</sup> See biology, chemistry, ENV 121-122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>4</sup> See social/behavioral science courses listed under General Education Electives.

## Physical Therapist Assistant A.A.S.

See Medical Education section

## Professional Writing Certificate

Offered through AL, AN, LO, MA, WO

**Purpose:** The Professional Writing Certificate program prepares candidates to compose documents and manage professional communications for a variety of contemporary professions, including business, military, medicine, government, science, and industry. Writers will gain expertise in composing, designing, and editing electronic texts, as well as a comprehensive foundation in grammar and

punctuation. Students may tailor their preparation for particular writing environments by selecting from a variety of elective courses in journalism, technical report writing, graphic design, writing for publication, writing for the Web, social media, and communications. Students may also incorporate a professional internship into the Certificate program. Students are strongly encouraged to meet with a professional writing advisor before enrolling in Certificate classes or as early as possible in their first semester of enrollment.

**Completion Requirements:** 31 total credits. All students must complete ENG 111 (or its equivalent) in the first semester of Certificate study. Students must complete a core of 18 credits of professional writing courses and 9 credits of elective courses. All students must complete the 3-credit ENG 298 (Seminar and Project) in the final semester of Certificate study.

**Credit for Prior Learning:** Students in this program may be eligible for credit for prior learning and will be evaluated on a case-by-case basis.

One Year		Credits
<b>1st Semester</b>		
CST	110 Intro. to Communication or CST 227 Business and Professional Communications	3
<sup>1</sup> ENG	111 College Composition I	3
<sup>1</sup> ENG	115 Technical Writing	3
ENG	114 Scientific Writing or 116 Writing for Business	3
<sup>2</sup> ____	Professional Writing Elective	3
<sup>3</sup> SDV	100 College Success Skills	1
<b>Total</b>		<b>16</b>
<b>2nd Semester</b>		
ENG	205 Technical Editing	3
ENG	123 Writing for the World Wide Web	3
<sup>2</sup> ____	Professional Writing Elective	3
<sup>2</sup> ____	Professional Writing Elective	3
<sup>4</sup> ENG	298 Seminar and Project	3
<b>Total</b>		<b>15</b>

**Total credits for the Professional Writing for Business, Government, and Industry Certificate = 31**

- <sup>1</sup> Students must complete ENG 111 and (or its equivalent) in the first semester of their registration.
- <sup>2</sup> Should be selected in consultation with an academic advisor. English approved electives are ENG 114, ENG 116, ENG 121, ENG 131, ENG 135, ENG 200, ENG 210, and ENG 280. For Non-English approved elective select from: ART 209, ART 116, ART 251, ART 283 and ART 284, BUS 100, CST 115, LGL 126, MKT 201, MKT 221, MKT 284, and other courses that may relate to a specific area of professional writing.
- <sup>3</sup> May substitute the SDV 101 Orientation section related to this program.
- <sup>4</sup> Students must complete ENG 298 in their final semester of Certificate study.

## Public History and Historic Preservation Career Studies Certificate

Offered through LO

**Purpose:** This curriculum is designed for students seeking a solid foundation in the theories, methods, and skills in the complementary fields of public history and historic preservation.

One Year		Credits
<b>1st Semester</b>		
HIS	180 Historical Archaeology	3
HIS	181 Intro. to Historic Preservation	3
<b>Total</b>		<b>6</b>
<b>2nd Semester</b>		
HIS	183 Survey of Museum Practice	3
<sup>1</sup> ____	Elective	3
<b>Total</b>		<b>6</b>
<b>3rd Semester</b>		
HIS	187 Interpreting Material Culture	3
HIS	190 Coordinator Internship	3
<b>Total</b>		<b>6</b>

**Total credits for the Public History and Historic Preservation Career Studies Certificate = 18**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

- <sup>1</sup> Choose elective from the following: GIS 200, HIS 186, HIS 205, HIS 218 or HIS 281.

## Radiography A.A.S.

See Medical Education section

## Respiratory Therapy A.A.S.

See Medical Education section

## Science

Associate of Science Degree

Offered through AL, AN, LO, MA, WO, ELI

**Purpose:** The curriculum is designed for individuals who are interested in a professional or scientific program and who plan to transfer to a four-year college or university to complete a baccalaureate degree with a major in one of the following fields: agriculture, biology, chemistry, pre-dentistry, forestry, geology, oceanography, pharmacy, physics, physical therapy, pre-medicine, science education, or mathematics.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully after investigation of the requirements of the transfer institution. The responsibility for proper course selection rests with the student. Students are encouraged to complete the A.S. degree before transferring.

**Recommended Preparation:** Satisfactory completion of the following high school units or equivalent as a minimum: 4 units of English, 3 units of college preparatory mathematics, 1 unit of laboratory science, and 1 unit of social science.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
<sup>1</sup> ITE	115 Intro. to Computer Applications and Concepts or General Education Elective	3
<sup>2</sup> MTH	263 Calculus I	4
<sup>3,4,5,6</sup> _____	Physical or Life Science Elective w/Lab or MTH 167 Precalculus with Trigonometry	4–5
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>15–16</b>
<b>2nd Semester</b>		
<sup>7</sup> ENG	125 Introduction to Literature I	3
<sup>2</sup> MTH	264 Calculus II	4
<sup>3,4,5</sup> _____	Physical or Life Science Elective w/Lab	4
<sup>8</sup> _____	Social Science Elective	3
	<b>Total</b>	<b>14</b>
<b>3rd Semester</b>		
<sup>9</sup> HIS	Elective	3
<sup>10</sup> _____	Humanities/Fine Arts Elective	3
<sup>3,4,5</sup> _____	MTH or Physical or Life Science Elective w/Lab	3–4
<sup>3,4,5</sup> _____	MTH or Physical or Life Science Elective w/Lab	3–4
<sup>8</sup> _____	Social Science Elective	3
	<b>Total</b>	<b>15–17</b>
<b>4th Semester</b>		
<sup>11</sup> CST	110 Intro. to Communication	3
<sup>12</sup> _____	General Education Elective	3
<sup>10</sup> _____	Humanities/Fine Arts Elective	3
<sup>3,4,5</sup> _____	MTH or Physical or Life Science Elective w/Lab	3–4
<sup>3,5</sup> _____	Physical or Life Science Elective w/Lab	4–5
	<b>Total</b>	<b>16–18</b>

**Total credits for the A.S. Degree in Science = 60–65**

Students who do not place into Calculus would instead take MTH 166 and a Physical or Life Science elective in place of Calculus in the first semester. See footnote 6.

- ITE 115 is only recommended for students planning to transfer to Mason. If considering transfer to another university, contact your counselor or academic advisor to determine the appropriate course. ITE 115 is not required by other major universities in Virginia. If you require pre-calculus (see footnotes 2 and 6) MTH 161 is an optional General Education Elective that can be used to fulfill this degree requirement.
- MTH 263 plus one semester of 200-level statistics may be taken by biology majors (MTH 245 Statistics I or MTH 246 Statistics II) may be taken by biology majors. Students not adequately prepared for MTH 263 may be required to take MTH 167 or MTH 161 and MTH 162. It is strongly recommended that students who do not place directly into MTH 263 meet with their academic advisor to plan their math progression through the degree.
- The sciences elective may be selected from the following: BIO 101-102, BIO 110, BIO 120, CHM 111-112, GOL 105-106, PHY 201-202, PHY 231-232, or any 200-level biology, chemistry, geology, or physics course.
- Mathematics, to include Precalculus only if required, may be used to satisfy up to three Physical or Life Science Lab Electives. Higher level math courses may include Calculus III (MTH 265), Linear Algebra (MTH 266) or Differential Equations (MTH 267).
- Students who plan to major in Biology should elect CHM 111-112, BIO 101-102 or BIO 110 and BIO 120, and either BIO 206 and PHY 201 or PHY 201-202. Students who plan to major in Chemistry should elect CHM 111-112 and CHM 241-242 and CHM 245-246 plus 2 semesters of physics (please see transfer

school for required physics class). Students who plan to major in physics should select PHY 231-232, MTH 265, MTH 267 and two of the following: CHM 111-112, PHY 243 or MTH 266. For all intended majors, it is strongly recommended that you contact your counselor or academic advisor to identify courses that meet requirements of your transfer institution.

- MTH 161 and MTH 162 may be taken in place of MTH 167. MTH 161 can be applied to the degree as described in footnote 1 and MTH 162 can be used in place of a Physical or Life Science elective. If you are required to take precalculus it is recommended that you complete a Physical or Life Science elective in your first semester in place of Calculus. Students who place into Calculus will not be given credit for completing precalculus and must complete a Physical or Life Science Lab Elective (footnote 3) or a higher level Math (footnote 4).
- May substitute ENG 112 with the advice of a counselor or academic advisor according to requirements of the transfer institution.
- See social/behavioral sciences courses listed under General Education Electives. Base selection on requirements of transfer institution.
- See HIS courses listed under social/behavioral science courses under General Education Electives. HIS 101-102 or HIS 111-112 are recommended.
- See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
- Select from the following: CST 100, CST 126, or CST 229.
- Choose from General Education listing. This elective is not needed if selections for all other requirements total 60 credits or more.

## Science: Mathematics Specialization Associate of Science Degree

Offered through AL, AN, LO, MA, NOVA Online, WO

**Purpose:** The curriculum is designed for individuals who plan to transfer to a four-year college or university to complete a baccalaureate degree. This curriculum is designed to prepare students to major in one of the following fields: mathematics, mathematics education, statistics, operations research, applied mathematics, or computer science.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

**Recommended Preparation:** Satisfactory completion of the following high school units or equivalent as a minimum: 4 units of English, 4 units of college preparatory mathematics, 1 unit of laboratory science, and 1 unit of social science.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
<sup>1</sup> HIS	Elective	3
ITE	115 Intro. to Computer Applications and Concepts or CSC 200 Introduction to Computer Science	3–4
MTH	263 Calculus I	4
SDV	100 College Success Skills or SDV 100	1
	<b>Total</b>	<b>14–15</b>

2nd Semester			
CSC	201 Computer Science	4-3	
<sup>2</sup> ENG	125 Introduction to Literature	3	
MTH	264 Calculus II	4	
<sup>3</sup> —	Social Science Elective	3	
	<b>Total</b>	<b>13-14</b>	

3rd Semester			
<sup>4</sup> —	Humanities/Fine Arts Elective	3	
MTH	265 Calculus III	4	
<sup>5</sup> MTH	Elective	3	
<sup>6</sup> —	Physical or Life Science Elective w/Lab	4-5	
<sup>3</sup> —	Social Science Elective	3	
	<b>Total</b>	<b>17-18</b>	

4th Semester			
<sup>7</sup> CST	110 Intro. to Communication	3	
<sup>8</sup> —	General Education Elective	3	
<sup>4</sup> —	Humanities/Fine Arts Elective	3	
<sup>5</sup> MTH	Elective	3	
<sup>6</sup> —	Physical or Life Science Elective w/Lab	4-5	
	<b>Total</b>	<b>16-17</b>	

**Total credits for the A.S. Degree in Science with a Specialization in Mathematics = 61-63**

Twenty of these credits must be taken in MTH courses for transfer to a four-year institution with a major in science.

- See HIS courses listed under social/behavioral science courses under General Education Electives. HIS 101-102 or HIS 111-112 are recommended.
- May substitute ENG 112 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- See social/behavioral science courses listed under General Education Electives. Students should base selection on requirements of the transfer
- See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
- Math electives should be chosen carefully after investigation of requirements of the transfer institution. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
- See biology, chemistry, ENV 121-122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- Select from the following: CST 100, CST 126, or CST 229.
- Choose from General Education listing. This elective is not needed if selections for all other requirements total 60 credits or more.

## Security Management Career Studies Certificate

See Administration of Justice

## Social Sciences

Associate of Science Degree

Offered through AL, AN, LO, MA, NOVA Online, WO

**Purpose:** This program is designed for individuals who plan to transfer to a four-year college or university to complete a bachelor of science in one of the social sciences. It also prepares students for some teacher certification programs. Students from the A.S. program major in a wide variety of fields, including anthropology, economics, government/political

science, history, mass communications, pre-law, psychology, public administration, social work, and sociology.

**Transfer Information:** This program provides transfer paths that include the general education courses and introductory major courses that students typically take during the first two years at a four-year college

or university when they are majoring in a social science. Because senior institutions differ in their requirements, students are strongly urged to work with their assigned advisor or a counselor and to acquaint themselves with the requirements of the major department in the college or university to which they plan to transfer. The responsibility for proper course selection rests with the student.

**Two Years Credits**

1st Semester		
ENG	111 College Composition I	3
<sup>1</sup> HIS	Elective	3
<sup>2</sup> MTH	154 Quantitative Reasoning	3
<sup>3</sup> —	Physical or Life Science Elective w/Lab	4
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>14</b>

2nd Semester		
<sup>4</sup> ENG	112 College Composition II	3
ITE	115 Intro. to Computer Applications and Concepts	3
<sup>2</sup> MTH	245 Statistics I	3
<sup>3</sup> —	Physical or Life Science Elective w/Lab	4
<sup>5</sup> —	Social Science Elective	3
	<b>Total</b>	<b>16</b>

3rd Semester		
<sup>6</sup> CST	110 Intro. to Communication or	3
<sup>7</sup> —	Humanities/Fine Arts Elective	3
<sup>8</sup> PSY	200 Principles of Psychology or	3
<sup>5</sup> —	SOC 200 Principles of Sociology	6
	Social Science Electives	6
	<b>Total</b>	<b>15</b>

4th Semester		
<sup>9</sup> —	General Education Electives	9
<sup>7</sup> —	Humanities/Fine Arts Elective	3
<sup>5</sup> —	Social/Behavioral Science Electives	3
	<b>Total</b>	<b>15</b>

**Total credits for the A.S. Degree in Social Sciences = 60**

- HIS 101, HIS 102, or HIS 112 recommended. Other HIS courses may be chosen from the list of approved general education courses.
- Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
- See biology, chemistry, ENV 121-122 physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- See social/behavioral science courses listed under General Education Electives. To meet requirements at many universities, students should enroll in at least one U.S. History course and one Western civilization course. Students should consult with a counselor to determine the appropriate social science courses for their intended transfer university.
- Select from the following: CST 100, CST 126, or CST 229.
- See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a

- counselor or academic advisor to meet the requirements of the transfer institution.
- <sup>8</sup> SOC 200 is recommended to meet the Sociology requirement at many universities.
- <sup>9</sup> See any of the courses listed under General Education Electives.

## Social Sciences: Deaf Studies Specialization

Associate of Science Degree

Offered through AN

**Purpose:** This program is designed for individuals who plan to transfer to a four-year college or university to complete a bachelor of science in a program that requires a background in American Sign Language and the Deaf community. Graduates may use their skills to work in human service fields such as daycare settings and as teacher assistants. Graduates from the program can also transfer to 4-year institutions and major in a wide variety of fields, including ASL instruction, Deaf education, linguistics, Deaf studies (e.g. history, literature, research, etc.), speech-language pathology and audiology, human services, communication sciences and disorders, and social work.

**Transfer Information:** This program provides transfer paths that include the general education courses and introductory major courses that students typically take during the first two years at a four-year college or university when they are majoring in a social science that deals with the Deaf community. Because senior institutions differ in their requirements, students are strongly urged to work with their assigned advisor or a counselor and to acquaint themselves with the requirements of the major department in the college or university to which they plan to transfer. The responsibility for proper course selection rests with the student.

**Special Admission Requirements:** Admission to this program requires that a student demonstrate an intermediate level of ASL fluency. A grade of “C” or better in ASL 202 will satisfy this requirement.

Students may be able to waive the ASL requirement if they have prior experience in ASL. To demonstrate ASL competency, students must receive a score on the Sign Communication Proficiency Interview (SCPI) or the Gallaudet University American Sign Language Proficiency Interview (GU-ASLPI) of “Intermediate” or higher.

Two Years		Credits
1st Semester		
ASL	150 Working with Deaf and Hard of Hearing People	2
ASL	261 American Sign Language V	3
<sup>1</sup> CST	110 Intro. to Communication	3
ENG	111 College Composition I	3
<sup>2</sup> MTH	154 Quantitative Reasoning	3
SDV	100 College Success Skills or SDV 101	1
<b>Total</b>		<b>15</b>

2nd Semester		
ASL	125 History and Culture of the Deaf Community	3
ASL	262 American Sign Language VI	3
<sup>3</sup> ENG	112 College Composition II	3
<sup>2</sup> MTH	245 Statistics I	3
<sup>4</sup> —	Social/Behavioral Science Elective	3
<b>Total</b>		<b>15</b>

3rd Semester		
ITE	115 Intro. to Computer Applications and Concepts	3
<sup>5</sup> HIS	Elective	3
<sup>6</sup> —	Humanities/Fine Arts Elective	3
<sup>7</sup> SOC	Elective	3
<sup>8</sup> —	Physical or Life Science Elective w/Lab	4
<b>Total</b>		<b>16</b>

4th Semester		
<sup>9</sup> —	General Education Elective	3
ASL	225 Literature of the U.S. Deaf Community	3
<sup>8</sup> —	Physical or Life Science Elective w/Lab	4
<sup>4</sup> —	Social/Behavioral Science Electives	6
<b>Total</b>		<b>16</b>

**Total credits for the A.S. Degree in Social Sciences with a Specialization in Deaf Studies = 62**

- Select from the following: CST 100, CST 110, CST 126, or CST 229.
- Many universities require MTH 154 or higher while others require MTH 161 or MTH 162 or higher, often including a statistics course, for majors in the social sciences. It is, therefore, important that students confer with a counselor to determine the appropriate mathematics courses for their intended transfer university. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
- May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- See social/behavioral science courses listed under General Education Electives. To meet requirements at many universities, students should enroll in at least one U.S. History course and one Western civilization course. Students should consult with a counselor to determine the appropriate social science courses for their intended transfer university.
- HIS 101, HIS 102, or HIS 112 is recommended. Other HIS courses may be chosen from the list of approved general education courses.
- See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
- SOC 200 or 201 is recommended to meet the sociology requirement at many universities.
- See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- Choose from General Education Listing. This elective is not needed if selections for all other requirements total 60 credits or more..

## Social Sciences: Geospatial Specialization

Associate of Science Degree

Offered through LO

**Purpose:** This program is designed to prepare students to transfer into baccalaureate programs in the geospatial or social sciences at a four-year institution. Students will learn theory about geospatial systems and how they are used.



**Transfer Information:** Since four-year colleges can vary their course and GPA requirements, please consult a counselor or academic advisor regarding specific requirements and course selection.

**Preparation:** Satisfactory completion of the following high school units or equivalent: 4 units of English; 3 units of mathematics (Algebra I–II and geometry); 1 unit of laboratory science; and 1 unit of social studies.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
GIS	101 Intro. to Geospatial Technology I	3
<sup>1</sup> MTH	154 Quantitative Reasoning	3
<sup>2</sup> ___	Physical or Life Science Elective w/Lab	4
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>14</b>
<b>2nd Semester</b>		
<sup>3</sup> ENG	112 College Composition II	3
GIS	200 Geographical Information Systems I	4
ITE	115 Intro. to Computer Applications and Concepts	3
<sup>1</sup> MTH	245 Statistics I or higher	3
<sup>2</sup> ___	Physical or Life Science Elective w/Lab	4
	<b>Total</b>	<b>17</b>
<b>3rd Semester</b>		
<sup>4</sup> ___	Humanities/Fine Arts Elective	3
<sup>5</sup> CST	110 Intro. to Speech Communication	3
GEO	200 Intro. to Physical Geography	3
GIS	201 Geographical Information Systems II	4
<sup>6</sup> HIS	Elective	3
	<b>Total</b>	<b>16</b>
<b>4th Semester</b>		
ENG	200-Level Literature Elective	3
GIS	203 Cartography for GIS or 205 GIS 3-Dimensional Analysis	3–4
PSY	200 Principles of Psychology or SOC 200 Principles of Sociology	3
<sup>7</sup> ___	Social/Behavioral Science Elective	3
<sup>7</sup> ___	Social/Behavioral Science Elective	3
	<b>Total</b>	<b>15–16</b>

**Total credits for the A.S. Degree in Social Sciences with a Specialization in Geospatial = 62–63**

- Many universities require MTH 154 or higher while others require MTH 161 or MTH 162 or higher, often including a statistics course for majors in the social sciences. It is, therefore, important that students confer with a counselor to determine the appropriate mathematics courses for their intended transfer university. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 263.
- See biology, chemistry (excluding CHM 101–102), ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence. Consult GIS faculty advisor for details.
- May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet requirements of transfer institution. ART 101, ART 102, or CST 130 is recommended.
- Select from the following: CST 100, CST 126, or CST 229.
- HIS 101, HIS 102 or HIS 112 is recommended. Other HIS courses may be chosen from the list of approved general education courses.
- See social/behavioral science courses listed under General Education Electives.

## Social Sciences: Political Science Specialization

Associate of Science Degree

Offered through AL, LO, NOVA Online

**Purpose:** This program is designed for individuals who plan to transfer to a four-year college or university to complete a baccalaureate degree. Graduates will have the knowledge, skills, and abilities equivalent to students entering the junior level at four-year colleges and universities.

**Transfer Information:** This program provides transfer paths that include the general education courses and introductory major courses that students typically take during the first two years at a four-year college or university when they are majoring in a social science. Because senior institutions differ in their requirements, students are strongly urged to work with their assigned advisor or a counselor and to acquaint themselves with the requirements of the major department in the college or university to which they plan to transfer. The responsibility for proper course selection rests with the student.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
<sup>1</sup> HIS	Elective	3
<sup>2</sup> MTH	154 Quantitative Reasoning	3
PLS	120 Intro. to Political Science	3
<sup>3</sup> PLS	135 American National Politics or PLS 241 International Relations I	3
SDV	100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
<sup>4</sup> ENG	112 College Composition II	3
ITE	115 Intro. to Computer Applications and Concepts	3
<sup>2</sup> MTH	245 Statistics I	3
<sup>5</sup> ___	Physical or Life Science Elective w/Lab	4
<sup>3</sup> PLS	136 State and Local Politics or see Footnote 3	3
	<b>Total</b>	<b>16</b>
<b>3rd Semester</b>		
<sup>6</sup> CST	110 Intro. to Speech Communication or	3
<sup>7</sup> ___	Humanities/Fine Arts Elective	3
<sup>6</sup> ___	Physical or Life Science Elective w/Lab	4
<sup>8</sup> PLS	Elective	3
<sup>9</sup> SOC	Elective	3
	<b>Total</b>	<b>16</b>
<b>4th Semester</b>		
<sup>10</sup> ___	General Education Elective	3
<sup>7</sup> ___	Humanities/Fine Arts Elective	3
<sup>8</sup> PLS	Elective	3
<sup>11</sup> ___	Social/Behavioral Science Elective	3
	<b>Total</b>	<b>12</b>

**Total credits for the A.S. Degree in Social Sciences with a Specialization in Political Science = 60**

- See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101–102 is recommended.
- Many universities require MTH 154 or higher while others require MTH 161 or MTH 162 or higher, often including a statistics course for majors in the social sciences. It is, therefore, important that students confer with a counselor to determine the appropriate mathematics courses for their intended transfer university. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.

- <sup>3</sup> Students who take PLS 135 must also take PLS 136. Students who take PLS 241 must also choose from one of the following courses: PLS 140, PLS 200, PLS 242, PLS 250, PLS 255, or SSC 115.
- <sup>4</sup> May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- <sup>5</sup> See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>6</sup> Select from the following: CST 100, CST 110, CST 126, or CST 229.
- <sup>7</sup> See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution. Students who plan to transfer into a B.A. program should take intermediate-level foreign language to fulfill these electives.
- <sup>8</sup> PLS electives include any of the following: PLS 135, PLS 136, PLS 140, PLS 200, PLS 211, PLS 212, PLS 220, PLS 225, PLS 230, PLS 241, PLS 242, PLS 250, PLS 255, and SSC 115.
- <sup>9</sup> SOC 200, SOC 211, or SOC 212 is recommended to meet the sociology requirement at many universities.
- <sup>10</sup> See any of the courses listed under General Education Electives.
- <sup>11</sup> See social/behavioral science courses listed under General Education Electives. To meet requirements at many universities, students should enroll in at least one U.S. History course and one Western civilization course. Students should consult with a counselor to determine the appropriate social science courses for their intended transfer university.

## Social Sciences: Psychology Specialization

Associate of Science Degree

Offered through AL, AN, LO, MA, WO

**Purpose:** This curriculum is designed for students who plan to transfer to a college or university for a Bachelor of Science in Psychology.

**Transfer Information:** Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

Two Years		Credits
<b>1st Semester</b>		
	BIO 101 General Biology I	4
	ENG 111 College Composition I	3
<sup>1</sup>	MTH 154 Quantitative Reasoning	3
	PSY 200 Principles of Psychology	3
	SDV 100 College Success Skills or SDV 101	1
	<b>Total</b>	<b>14</b>
<b>2nd Semester</b>		
	BIO 102 General Biology II	4
<sup>2</sup>	ENG 112 College Composition II	3
	ITE 115 Intro. to Computer Applications and Concepts	3
<sup>1</sup>	MTH 245 Statistics I	3
<sup>3</sup>	PSY Any 200-level Psychology	3
	<b>Total</b>	<b>16</b>

3rd Semester		
<sup>4</sup>	CST 110 Intro. to Communication	3
<sup>5</sup>	HIS Elective	3
<sup>6</sup>	___ Humanities/Fine Arts Elective	3
	PSY 211 Research Methodology for Behavioral Sciences	3
<sup>3</sup>	PSY Any 200-level Psychology	3
	<b>Total</b>	<b>15</b>

4th Semester		
	ENG 200-Level Literature Elective	3
<sup>6</sup>	___ Humanities/Fine Arts Elective	3
	PSY 213 Statistics for Behavioral Sciences	3
<sup>2</sup>	___ General Education Elective	3
<sup>7</sup>	___ Social/Behavioral Science Elective	3
	<b>Total</b>	<b>15</b>

### Total credits for the A.S. Degree in Social Sciences with a Specialization in Psychology = 60

- <sup>1</sup> May substitute two higher level mathematics courses.: Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264. Seek advice of a counselor or academic advisor to meet requirements of other transfer institutions.
- <sup>2</sup> May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- <sup>3</sup> Psychology majors may choose any two 200-level psychology courses to fulfill this requirement.
- <sup>4</sup> Select from the following: CST 100, CST 126, or CST 229.
- <sup>5</sup> HIS 101, HIS 102 or HIS 112 is recommended. Other HIS courses may be chosen from the list of approved general education courses
- <sup>6</sup> See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
- <sup>7</sup> See social/behavioral science courses listed under General Education Electives.

## Social Sciences: Teacher Education Specialization

Associate of Science Degree

Offered through AL, AN, LO, MA, NOVA Online, WO

**Purpose:** This curriculum prepares students to transfer to a four-year college or university teacher preparation program. It is specifically designed for students who plan to seek endorsement and licensure as teachers in PK-3, PK-6, middle school, or special education.

This degree program is designed to help students earn 47 of the required 57 endorsement course hours for a teaching license in elementary education for the state of Virginia. In addition, this degree program includes many of the required endorsement courses for licensure in middle school (any subject) and high school history and social sciences. Some of these universities will guarantee admission to graduates of this program who have a cumulative GPA of at least 2.5, earn at least a “C” in all English courses. Students are strongly encouraged to take the VCLA exam shortly after completing their 200-level English course. Students may want to take the Praxis CORE math exam after completing 9-12 hours of mathematics. The student, working directly with a

NOVA Teacher Education Specialization advisor/counselor, should complete a transfer letter of agreement.

Two Years		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
HIS	121 United States History I	3
HLT	110 Concepts of Personal and Community Health	3
<sup>1</sup> MTH	154 Quantitative Reasoning	3
—	Physical or Life Science Elective w/Lab	4
SDV	101 Orientation to Education	1
	<b>Total</b>	<b>17</b>
<b>2nd Semester</b>		
<sup>2</sup> ENG	112 College Composition II	3
HIS	122 United States History II	3
ITE	115 Intro. to Computer Applications and Concepts	3
—	Physical or Life Science Elective w/Lab	4
<sup>1</sup> MTH	245 Statistics I or higher	3
	<b>Total</b>	<b>16</b>
<b>3rd Semester</b>		
<sup>3</sup> CST	110 Intro. to Communication	3
ECO	201 Principles of Macroeconomics or ECO 202 Principles of Microeconomics	3
EDU	200 Intro. to Teaching as a Profession	3
<sup>4</sup> ENG	200-Level Literature Elective	3
<sup>5</sup> —	General Elective	3
	<b>Total</b>	<b>15</b>
<b>4th Semester</b>		
GEO	210 People and the Land: Intro. to Cultural Geography	3
HIS	101 History of Western Civilization I or HIS 102 History of Western Civilization II	3
<sup>6</sup> —	Humanities/Fine Arts Elective	3
<sup>6</sup> —	Humanities/Fine Arts Elective	3
PLS	135 American National Politics or PLS 136 State and Local Politics or PLS 211 U.S. Government I	3
	<b>Total</b>	<b>15</b>

**Total credits for the A.S. Degree in Social Sciences with a Specialization in Teacher Education = 63**

- Students should make choices after consulting with the Teacher Education Specialization academic advisor/counselor on the specific requirements at the four-year Virginia institution to which they plan to transfer. Credit will not be awarded for both MTH 261 and 263. Credit will not be awarded for both MTH 262 and MTH 264.
- May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- Select from the following: CST 100, CST 126, or CST 229.
- Select from ENG 241, ENG 242, ENG 243, ENG 244, ENG 251, or ENG 252.
- Select based upon the requirements of the senior institution to which the student plans to transfer. Courses must be chosen from the list of approved electives under General Education Electives. Examples of courses recommended by some of the universities that helped develop this curriculum include ECO 201 or ECO 202, foreign language, PSY 230, REL 231, or REL 232.
- Choose from ART 101, ART 102, ART 105, MUS 121, MUS 122, REL 230, REL 231, REL 232, PHI 101, PHI 102, SPA 201, SPA 202, FRE 201, or FRE 202.

## Substance Abuse Rehabilitation Counselor

Certificate

Offered through AL

**Purpose:** This curriculum is designed to fulfill the Virginia state educational requirements for the certification of substance abuse counselors. To meet substance abuse counselor certification requirements, the applicant is expected to meet specific education requirements including didactic and experiential learning with a supervised internship required.

Individuals seeking skills and knowledge in this career field, but not seeking state certification may also enroll.

**Cooperative Education:** Students in this curriculum will participate in at least 3 semester hours of Cooperative Education unless they already have equivalent experience.

One Year		Credits
<b>1st Semester</b>		
ENG	111 College Composition I or CST 110 Intro. to Communication	3
HMS	121 Basic Counseling Skills I	3
HMS	141 Group Dynamics I	3
HMS	251 Substance Abuse I	3
HMS	266 Counseling Psychology	3
PSY	232 Life Span Human Development II	3
<sup>1</sup> SDV	100 College Success Skills	1
	<b>Total</b>	<b>19</b>
<b>2nd Semester</b>		
HMS	142 Group Dynamics II	3
HMS	145 Effects of Psychoactive Drugs	3
HMS	252 Substance Abuse II	3
HMS	258 Case Management and Substance Abuse	3
HMS	290 Coordinated Internship	3
<sup>2</sup> —	Social Science Elective	3
	<b>Total</b>	<b>18</b>

**Total credits for the Substance Abuse Rehabilitation Counselor Certificate = 37**

- May substitute the SDV 101 Orientation section related to this program.
- See social/behavioral science courses listed under General Education Electives.

## Teacher Education Specialization A.S.

See Social Sciences A.S.

## Theatre Career Studies Certificate

See Liberal Arts

## Veterinary Technology

Associate of Applied Science Degree

Offered through LO

**Purpose:** Our program is accredited by the American Veterinary Medical Association Committee on Veterinary Technician Education and Activities (CVTEA). We award an Associate of Applied Science (A.A.S.)

degree and prepare you for the Veterinary Technician National Examination (VTNE), an entry-level national licensing exam.

**Pre-Admission Requirements:** Completion of the following high school units or equivalent with a C or better:

- Proficiency in English
- 1 unit of Algebra
- 1 unit of Biology with laboratory
- 1 unit of Chemistry with laboratory
- 18-years of age at time of application
- Letter of Intent
- Two professional letters of recommendations
- Current resume
- If not working at a veterinary clinic or hospital, must complete 32 hours of clinical observation in a veterinary clinic or hospital of choice and obtain a statement from clinical practice on their official letterhead documenting these hours.
- Official high school and college transcripts

**Admission Requirements:** Completion of Pre-Veterinary Technology Semester Courses

**Responsibilities of Veterinary Technology Students:**

1. Students in the Veterinary Technology Program incur a variety of additional expenses. These include, but are not limited to, the cost of uniforms (such as lab coat with name tag), human vaccinations, a preadmissions physical examination, lab fees, lab supplies, accessories, and travel to and from clinical assignments, including program required continuing education (CE) seminars. Students are also responsible for individual state licensure and national accreditation application and testing fees.
2. A strict dress code is required in the clinical setting. Students may be dismissed if they fail to comply with this dress code.
3. Students are required to complete learning experiences at local hospitals and/or other agencies. Students may be required to attend day, evening, night, or weekend clinical assignments.
4. Students must provide their own transportation to clinical assignments and CE seminars. Strict attendance is required at clinical sites.
5. While enrolled in clinical courses, students may not replace or take the responsibility of “qualified” staff in affiliated facilities. However, after demonstrating proficiency, students may be permitted to perform specified procedures under careful supervision. Veterinary Technology students may be employed in clinical veterinary medical facilities outside regular education hours provided that such work does not interfere with their academic responsibilities.

**Veterinary Technology Program Continuation Requirements:**

1. All courses in the program major must be completed with a grade of “C” or better before taking the next course in the sequence, unless waived by the academic dean upon the recommendation of the program director.
2. All courses in the major must be taken in the sequence prescribed in the *NOVA Catalog*.
3. Students must pass both the theoretical and the clinical/lab portions in order to pass a course with grade of “C” or better.
4. Program faculty and clinical affiliates reserve the right to recommend, through appropriate channels, withdrawal of any student who either fails to exhibit safe performance or fails to adhere to required clinical affiliate policies and procedures.
5. Students must be able to perform all essential functions of the Veterinary Technology Program, with or without reasonable accommodation. See Technical Standards & Essential Functions for the Veterinary Technology Program, visit [www.nvcc.edu/loudoun/divisions/natural/vettech/oncampus/requirements.html](http://www.nvcc.edu/loudoun/divisions/natural/vettech/oncampus/requirements.html).

**Program Reenrollment Requirements:** Any student who has voluntarily withdrawn or who has been withdrawn due to unsatisfactory academic or clinical performance may apply for readmission the following academic year. However, acceptance will be based upon space availability, successful fulfillment of any contingencies agreed to in writing at the time of withdrawal, and program director approval. A readmissions interview, medical examination, and human rabies vaccine may be required.

**Special Accreditation Status:** Both the on-campus and online programs are fully accredited by the American Veterinary Medical Association (AVMA) Committee on Veterinary Technician Education and Activities (CVTEA). [www.avma.org/ProfessionalDevelopment/Education/Accreditation/Programs/Pages/vettech-programs.aspx](http://www.avma.org/ProfessionalDevelopment/Education/Accreditation/Programs/Pages/vettech-programs.aspx).

**Delivery Method Options:** The program may be completed by program placement in either the full-time, on-site program at Loudoun Campus or the online program, but not both at the same time.

**Online Veterinary Technology Program:** Special rules apply to online courses offered to students living outside of Virginia. For further information visit <https://eli.nvcc.edu/state-authorization.htm>. Courses are administered online using Blackboard and are offered through NOVA Online. Students use class notes from

the online course site and textbooks to study and complete course assignments. Students participate in online class discussions and communicate regularly with faculty. Laboratory review and practical examinations are held at NOVA's Loudoun Campus. Formal written examinations are taken at testing centers at the student's local community college or any NOVA campus Testing Center. Many methods of evaluation of clinical skills are employed including: video, product evaluation such as radiographs and blood smear slides done by the student, assignments, as well as testing on campus.

Special curriculum admission requirements (#1–12 above) and Veterinary Technology Program continuation requirements (#1–5 above) also pertain to the online program. Details for additional forms for Memo of Agreement and online program application

checklist for packet are available at [www.nvcc.edu/loudoun/divisions/natural/vettech/online/index.html](http://www.nvcc.edu/loudoun/divisions/natural/vettech/online/index.html).

The following requirements apply to students in the online Veterinary Technology Program in addition to the requirements listed for the on-site program:

1. Students must currently work at an approved veterinary facility for an average minimum of 20 hours per week. This facility is expected to be registered with the Board of Veterinary Medicine.
2. Students must be supervised by a licensed veterinarian where they work. The student, the supervising veterinarian (also referred to as the mentor), and Program faculty complete the Memoranda of Agreement that outline the goals of the Program and expectations of each participant. The mentor has the option of appointing an assistant mentor, who must be another licensed veterinarian or licensed veterinary technician, to assist in supervising the student during any clinical assignments.
3. Students must physically attend scheduled lab sessions and practical exams at the Loudoun Campus at least two or three times per semester.
4. The online program requires three years (eight consecutive semesters) for completion. Students will enroll in two or three veterinary technology-specific courses per semester for eight semesters, including two summer sessions. Classes must be taken in the sequence laid out on the Veterinary Technology website at [www.nvcc.edu/loudoun/divisions/natural/vettech/online/courses.html](http://www.nvcc.edu/loudoun/divisions/natural/vettech/online/courses.html). The following curricular layout shows the sequence of courses for the on-campus program.

<b>Two Years and a Half</b>			<b>Credits</b>
<b>Prerequisites:</b>			
<sup>1</sup>	BIO	195 Anatomy and Physiology of Domestic Animals	4
	CHM	101 Intro to Chemistry or CHM 111 General Chemistry	4
	ENG	111 College Composition I	3
	MTH	133 Mathematics for Allied Health	3
<sup>2</sup>	SDV	101 Orientation to Veterinary Technology	1
	<b>Total</b>		<b>15</b>
<b>1st Semester</b>			
	CST	110 Intro. to Communication or CST 126 Interpersonal Communication	3
<sup>3</sup>	___	Social Science Elective	3
<sup>4</sup>	___	Humanities/Fine Arts Elective	3
	VET	105 Intro. to Veterinary Technology	3
	VET	121 Clinical Practices I	3
	<b>Total</b>		<b>15</b>
<b>2nd Semester</b>			
	VET	116 Animal Breeds and Behavior	3
	VET	131 Clinical Pathology I	3
	VET	135 Anesthesia of Domestic Animalsr	2
	VET	211 Animal Diseases I	2
	VET	216 Animal Pharmacology	2
	<b>Total</b>		<b>12</b>
<b>3rd Semester</b>			
	VET	132 Clinical Pathology II	3
	VET	214 Animal Dentistry	2
	VET	217 Intro. to Laboratory, Zoo, and Wildlife Medicine	2
	<b>Total</b>		<b>7</b>
<b>4th Semester</b>			
	VET	122 Clinical Practices II	3
	VET	133 Clinical Pathology III	3
	VET	212 Animal Diseases II	2
	VET	221 Advanced Clinical Practices III	4
	<b>Total</b>		<b>12</b>
<b>5th Semester</b>			
	VET	235 Animal Hospital Management/Client Relations	3
	VET	290 Preceptorship in Veterinary Technology	4
	<b>Total</b>		<b>7</b>

**Total credits for the A.A.S. Degree in Veterinary Technology = 68**

- <sup>1</sup> Students who have completed VET 111 do not need to take BIO 195.
- <sup>2</sup> Students in the online program may substitute with SDV 100.
- <sup>3</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>4</sup> See humanities/fine arts courses listed under General Education Electives.

**Visual Art**

Associate in Fine Arts

Offered through AL, AN, LO, MA, WO

**Purpose:** This studio-arts intensive curriculum is designed for students who seek transfer into a Bachelor of Fine Arts (BFA) program or similar baccalaureate program in fine arts at a college or university.

**Transfer Information:** Transfer Information: Students are advised to work closely with the academic advisor and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of transfer institution. The responsibility for proper course selection rests with the student.



**Recommended Preparation:** Satisfactory aptitude in visual art.

Two Years		Credits
<b>1st Semester</b>		
ART	101 History and Appreciation of Art I	3
ART	121 Drawing I	3
ART	131 Fundamentals of Design I	3
ART	140 Introduction to Graphic Skills or PHT 101 Photography I	3
ENG	111 College Composition I	3
SDV	101 Personal Development for Art Students	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
ART	102 History and Appreciation of Art II	3
ART	122 Drawing II	3
ART	132 Fundamentals of Design II	3
<sup>1</sup> ---	ART or PHT Elective	3
ART	199 Supervised Study: Portfolio Review	1
<sup>2</sup> MTH	154 Quantitative Reasoning	3
	<b>Total</b>	<b>16</b>
<b>3rd Semester</b>		
<sup>1</sup> ---	ART or PHT Elective	3
<sup>1</sup> ---	ART or PHT Elective	3
<sup>1,3</sup> ---	ART or PHT Elective or General Education Elective	3
ART	299 Supervised Study: Portfolio Review	2
<sup>4</sup> ---	Physical or Life Science Elective w/Lab	4
	<b>Total</b>	<b>15</b>
<b>4th Semester</b>		
<sup>1,3</sup> ---	ART or PHT Elective or General Education Elective	3
<sup>3</sup> ART	106 History of Modern Art or ART 250 History of Design or PHT 110 History of Photography or General Education Elective	3
<sup>5</sup> ---	Social Science Elective	3
<sup>6</sup> CST	100 Principles of Public Speaking	3
ENG	English Literature Elective	3
	<b>Total</b>	<b>15</b>

**Total credits for the Visual Art A.F.A. = 62**

- <sup>1</sup> Courses may be selected from the following electives with the advice of a counselor or academic advisor according to the requirements of the transfer institution. Students who are interested in Graphic Design, select from ART 116, ART 141, ART 142, and ART 217. Students interested in Fine Arts select from ART 153, ART 231, ART 241, or ART 271. Students interested in Photography, select from PHT 101, PHT 102, PHT 103, PHT 104, PHT 110, PHT 130, PHT 131, PHT 201, PHT 221, PHT 270.
- <sup>2</sup> May substitute any higher-level mathematics course. See transfer institution requirements.
- <sup>3</sup> General Education Electives may be needed for this elective depending on the requirements of the transfer institution. Seek advice of a counselor or academic advisor and consult list of approved General Education Electives.
- <sup>4</sup> See biology, chemistry, ENV 121-122, physics, geology, or natural science courses with a lab component listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- <sup>5</sup> See social/behavior science course listed under General Education Electives.
- <sup>6</sup> CST 100 or CST 101 will fulfill this elective depending on the requirements of the transfer institution. Seek advice of a counselor or academic advisor.

## Web Design and Development Career Studies Certificate

See Information Technology

## Web Design Specialist Career Studies Certificate

See Graphic Design

## Welding: Basic Techniques

Career Studies Certificate

**Offered through MA**

**Purpose:** This curriculum is designed for individuals wishing to obtain fundamental skills for immediate entry-level positions in the welding trade as welding apprentices or welding laboratory assistants.

Its structure allows students to pursue these courses on a part-time basis. All courses will apply to the Welding Certificate.

One Year		Credits
<b>1st Semester</b>		
<sup>1</sup> ENG/CST	Elective	3
WEL	120 Introduction to Welding	2
WEL	121 Arc Welding	2
	<b>Total</b>	<b>7</b>
<b>2nd Semester</b>		
WEL	122 Welding II (Electric Arc)	3
WEL	150 Welding Drawing and Interpretation	2
	<b>Total</b>	<b>5</b>
<b>3rd Semester</b>		
WEL	130 Inert Gas Welding	3
WEL	160 Semi-Automatic Welding Processes	3
	<b>Total</b>	<b>6</b>

**Total credits for the Welding: Basic Techniques Career Studies Certificate = 18**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

- <sup>1</sup> May be met by ENG 111 or other ENG courses approved by a student's advisor, or by CST 100, CST 110, CST 126, or CST 229.

## Medical Education – Allied Health and Nursing Programs

The College offers numerous degrees and career studies certificate programs at the Medical Education Campus for those who wish to pursue careers in the health professions. Many of the programs are accredited by external accrediting agencies. Each program is designed with the advice of community health professionals to include a balance of technical and general education courses. The purpose of the Allied Health and Nursing Programs is to prepare caring, competent, adaptable, reflective, service-oriented healthcare professionals who can identify and use a variety of resources and technologies to function successfully in diverse and evolving healthcare practice environments.

Students are advised that NOVA's Allied Health and Nursing Programs have been designed to prepare students for direct entry to health careers. However, programs may have articulated understandings with four-year colleges and universities that facilitate the partial or complete transfer of NOVA coursework to four-year degree programs. Students who wish to transfer to a baccalaureate program should consult the appropriate program director early in the program of study.

Allied Health and Nursing Programs are based at the Medical Education Campus. Some core courses are available online or at locations other than the Medical Education Campus. Students may take general education support courses at any of the six College campuses. A prior college degree will not automatically waive English, math, science, and computer courses that may be required by a specific Allied Health program. These courses must be taken or the equivalent courses transferred in from an accredited U.S. institution, and must meet the specified grade requirement for the desired program. Science courses must have been taken within the past 10 years to be accepted. For more information on transferring courses, please see the current *Credit for Prior Learning Manual*.

Because of limited laboratory, classroom, and/or clinical space, certain Allied Health and Nursing Programs have limited enrollment. Acceptance to NOVA does not constitute acceptance into a specific Allied Health or Nursing Program. External accrediting and licensing agencies may specify program requirements.

The College maintains clinical affiliate agreements with a large number of healthcare facilities and community-based agencies for clinical instruction. These regulate the conditions under which NOVA

Allied Health and Nursing students may obtain required clinical experience.

Each program has specific admission, program continuation, and program completion criteria. These are described under each program. Due to the unique responsibilities involved in health careers, the College reserves the right to require that any student who is unsuited for any Allied Health or Nursing Program be withdrawn and guided into a more suitable field of study.

Admission into an Allied Health or Nursing Program begins with application to the College, followed by attendance or review of an online information session. Please see the desired program for admission requirements and policies. Applications cannot be submitted until all requirements are completed. Applications must be submitted during the application period for each program. Please refer to the information session for the program deadline.

Students are accepted with priority given to

1. legal residents domiciled in the cities and counties supporting the College,
2. other Virginia legal residents,
3. out-of-state applicants, and
4. international students requiring an I-20.

For healthcare programs, "counties supporting the College" (Category 1 above) may include those in which clinical affiliates have contractual agreements with NOVA or students from other VCCS service areas whose community college does not offer the specific program.

An annual criminal background check and drug screening will be required as clinical affiliates mandate this requirement in affiliation agreements. Any student who does not pass the background check or drug screening must resolve this issue directly with the agency that conducted the search. Unresolved issues presented in the criminal background checks or drug screenings may result in denial of program placement or dismissal from the program. Such dismissed students will not be allowed admission in any other healthcare-related program.

Generally, the criteria to pass the background check are

- No felony convictions
- No alcohol or drug misdemeanor convictions (except a single alcohol-related misdemeanor conviction more than seven years ago, which may be waived)

## General Information and Admission Requirements for Allied Health and Nursing Programs

The following chart lists the Allied Health and Nursing Programs and shows the program type and number of credits required for graduation from each.

Allied Health and Nursing Degree and Career Studies Certificate (CSC) Programs		
Program Name	Program Type	Credits
*Dental Hygiene	A.A.S.	72
*Diagnostic Medical Sonography	A.A.S.	70
Emergency Medical Services	A.A.S.	67
*Health Information Management	A.A.S.	72
*Medical Lab Technology	A.A.S.	70
*Nursing	A.A.S.	67
*Occupational Therapy Assistant	A.A.S.	69
*Physical Therapy Assistant	A.A.S.	69
*Radiography	A.A.S.	70
*Respiratory Therapy	A.A.S.	71
Clinical Data Coding	CSC	29
Dental Assisting	Certificate	43
Emergency Medical Technician–Basic	CSC	16
Emergency Medical Technician–Intermediate	CSC	27
Medical Laboratory Assistant	CSC	27
Health Information Technology	CSC	23
Paramedic	CSC	26
Phlebotomy	CSC	16

\*These programs require students to successfully complete prerequisite courses prior to admission. See program description for specific details.

### Responsibilities of Allied Health and Nursing Students

- To prepare students for the high ethical standards of the health professions, the College expects absolute academic integrity both in the classroom and in clinical practice. Therefore, cheating, attempting to cheat, plagiarizing, lying, stealing

academic work which includes secured tests or related materials, submitting papers purchased or written by others, or failing to report an occurrence of academic dishonesty or any violation of this honor code may subject the student to the College's disciplinary procedures as defined in the *NOVA Student Handbook*.

- Students in Allied Health and Nursing Programs incur a variety of expenses in addition to College tuition and fees. These include, but are not limited to, the cost of uniforms, accessories, and travel to clinical assignments. Students are also responsible for state licensure and national accreditation application and testing fees.
- In certain programs the College reserves the right to require students to obtain and maintain at their own expense liability/malpractice insurance with a carrier authorized to transact such business in the Commonwealth of Virginia. Whether or not insurance appropriate to the program is required, students are encouraged to carry such insurance on their own.
- A strict dress code is required in the clinical setting. Students may be dismissed if they fail to comply with this dress code.
- Students are required to complete learning experiences at local hospitals and/or other community-based agencies. Students may be required to attend day, evening, and/or weekend clinical assignments.
- Students must provide their own transportation to clinical assignments. Strict attendance is required at clinical sites.
- Students may utilize the resources of the assigned clinical affiliate for emergency medical treatment for injuries or illness that may occur during the time period when students are assigned to the healthcare facility. The student is responsible for any expenses incurred for this treatment.
- Students must comply with all clinical agreement protocols including immunization requirements, drug screening, background checks, and personal health insurance.
- Students must keep their CPR certifications and required immunizations current each year they are enrolled in an Allied Health or Nursing Program.
- While enrolled in clinical courses, students may not replace or take the responsibility of "qualified" staff in affiliated facilities. However, after demonstrating proficiency, students may be permitted to perform specified procedures under careful supervision. Allied Health and Nursing students may be employed in clinical facilities outside regular education hours provided that such work does not interfere with academic responsibilities. The work must be non-compulsory and subject to employee regulations. Any exception to this policy must have the approval of the Allied

Health or Nursing academic dean.

- Students are expected to conform to the Code of Clinical Conduct as outlined in the *Nursing and Allied Health Student Handbook(s)*. All incidents of suspected academic dishonesty will be reported to the program director for review.

### Continuation Requirements for Allied Health and Nursing Students

- To pass a course students must successfully complete both the didactic (classroom) and the clinical/lab requirements.
- Program faculty and clinical affiliates reserve the right to recommend, through appropriate channels, withdrawal of any student who exhibits unsafe performance or non-adherence to prescribed clinical affiliate policies and procedures.
- Students must be able to perform all essential functions of the program in which they are enrolled.
- As NOVA's clinical partners must continually respond to the rapidly changing health care environment, the clinical requirements for students may be changed without notice. NOVA's Allied Health programs may be unable to provide clinical placements for students who cannot comply with new requirements, for example, more stringent background check requirements or different immunization specifications.

#### For Allied Health Students Only:

- Each course in the program major must be completed with a grade of “C” or better before taking the next course in the sequence and to satisfy graduation requirements, unless otherwise approved by the program director.
- All courses in the major must be taken in the sequence prescribed in the *NOVA Catalog*, unless otherwise approved by the program director.

### Program Reenrollment Requirements for Allied Health and Nursing Students

If a student is dismissed, the student is no longer eligible for readmission. Any student who has voluntarily withdrawn or has been withdrawn due to unsatisfactory academic and/or clinical performance must see the program director within 10 business days for an exit interview or to discuss possible options for continuing in the program. Students withdrawn for academic and/or clinical conduct issues will need to refer to the *NOVA Student Handbook* at <http://www.nvcc.edu/students/handbook>.

## Medical Education – Allied Health and Nursing Curricula

### Dental Hygiene

Associate of Applied Science Degree

Offered through MEC

**Purpose:** The program is designed to prepare students to serve in a dynamic and growing health profession as members of the dental health team. After successful completion of the program, the student will be eligible to take the National Board Dental Hygiene Examination and professional licensure examinations. Upon successful completion of the licensing process, the title “Registered Dental Hygienist” (R.D.H.) is awarded.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Admission Requirements:** Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Be eligible to sit for the licensure exam, which will require the student to present documentation of legal status in the U.S.
- Pass BIO 141, BIO 142, and BIO 150 with a grade of “B” or higher prior to being admitted to the program.
- Pass ENG 111 College Composition I and SDV 101 Orientation to Healthcare with a “C” or higher prior to being admitted to the program.
- Be willing to repeat courses or to complete evaluative testing for credits earned more than ten years ago.
- Review the competitive admission and deadlines for applications on the dental hygiene website at [www.nvcc.edu/medical/divisions/allied/dental-hygiene.html](http://www.nvcc.edu/medical/divisions/allied/dental-hygiene.html).

**Special Program Requirements:** The Virginia Board of Dentistry reserves the right to deny licensure to any candidate who has been convicted of a crime involving moral turpitude or the use of drugs or alcohol to the extent that such use renders him/her unsafe to practice dental hygiene. Any applicant who has been found guilty of a misdemeanor or felony must consult with the Dental Hygiene program director prior to admission.

**Special Accreditation Status:** The Dental Hygiene Program is accredited by the American Dental Association's Commission on Dental Accreditation and has been granted the accreditation status of approval without reporting requirements. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. The Commission's web address is [www.ada.org/100.aspx](http://www.ada.org/100.aspx).

### Bloodborne Pathogens and Infectious Diseases

**Statement:** By nature of the profession, students accepted into the Dental Hygiene Program may be exposed to blood and body fluids while practicing dental hygiene skills or providing services during clinical, preclinical, and laboratory sessions. Policies and procedures have been established to ensure the working environment is safe in order to minimize disease transmission. Prospective students may request a copy of the policy on bloodborne infectious diseases by calling 703-822-6627.

Prerequisites:		Credits
BIO	141 Human Anatomy and Psychology I	4
BIO	142 Human Anatomy and Psychology II	4
BIO	150 Introductory Microbiology	4
ENG	111 College Composition I	3
SDV	101 Orientation to Healthcare	1
<b>Total</b>		<b>16</b>

Two Years		Credits
<b>1st Semester</b>		
DNH	111 Oral Anatomy	2
DNH	115 Histology/Head and Neck Anatomy	3
DNH	130 Oral Radiography for the Dental Hygienist	3
DNH	141 Dental Hygiene I	5
<b>Total</b>		<b>13</b>

<b>2nd Semester</b>		
DNH	120 Management of Emergencies	2
DNH	142 Dental Hygiene II	5
DNH	145 General and Oral Pathology	2
DNH	146 Periodontics for the Dental Hygienist	2
DNH	216 Pharmacology	2
<b>Total</b>		<b>13</b>

<b>3rd Semester</b>		
DNH	143 Dental Hygiene III	4
DNH	214 Practical Materials for Dental Hygiene	2
<b>Total</b>		<b>6</b>

<b>4th Semester</b>		
DNH	150 Nutrition	2
DNH	226 Public Health Dental Hygiene I	2
DNH	235 Management of Pain and Anxiety in the Dental Office	2
DNH	244 Dental Hygiene IV	5
SOC	200 Principles of Sociology	3
<b>Total</b>		<b>14</b>

<b>5th Semester</b>		
DNH	227 Public Health Dental Hygiene II	1
DNH	230 Office Practice and Ethics	1
DNH	245 Dental Hygiene V	5
<sup>1</sup> —	Humanities/Fine Arts Elective	3
<b>Total</b>		<b>10</b>

**Total credits for the A.A.S. Degree in Dental Hygiene = 72 (includes 12 prerequisite credits)(includes 16 prerequisite credits)**

<sup>1</sup> See humanities/fine arts courses listed under General Education Electives.

## Dental Assisting Certificate

Offered through MEC

**Purpose:** This curriculum is designed to prepare students to perform chairside assisting, minor laboratory, and basic office procedures. Students learn the theory and skills to assist in the dental operatory through course work in the areas of chairside assisting, radiology, dental materials, dental and biomedical sciences, as well as clinical practice. Graduates can perform certain additional tasks allowing them to become productive and valued members of the dental health team. Upon successful completion of this program, students are eligible to sit for the Dental Assisting National Board Examination (DANB). After successful completion of this examination, the credential Certified Dental Assistant (CDA) is awarded.

**Admission Requirements:** Students must:

- Comply with all General Admission Requirements for Allied Health Programs.
- Have a high school diploma or GED.
- Pass Algebra I or appropriate placement scores.
- Pass ENG 111 College Composition I, NAS 150 Human Biology, and SDV 101 Orientation to Health Care with a grade of "B" or higher prior to admission into the program.
- Pass NAS 150 Human Biology with a "B" or higher prior to admission into the program.
- Be willing to repeat courses or to complete evaluative testing for credits earned more than ten years ago.
- View an information session located on the Dental Assisting web site <https://www.nvcc.edu/medical/divisions/allied/dental-assisting.html>.

**Special Accreditation Status:** The Dental Assisting program maintains their status of accreditation by the Commission on Dental Accreditation. Students who successfully complete the program are considered to be graduates of an accredited program for purposes of certification and regulations as set forth by state licensing boards. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. The Commission's web address is: [www.ada.org/100.aspx](http://www.ada.org/100.aspx).



## Bloodborne Pathogens and Infectious Diseases

**Statement:** By nature of the profession, students accepted into the Dental Assisting program may be exposed to blood and body fluids while practicing dental skills or providing services during clinical, preclinical, and laboratory sessions. Policies and procedures have been established to ensure the working environment is safe in order to minimize disease transmission. Prospective students may request a copy of the policy on bloodborne infectious diseases by calling 703-822-6627.

Prerequisites:		Credits
ENG	111 College Composition I	3
NAS	150 Human Biology	4
SDV	101 Orientation to Healthcare	1
<b>Total</b>		<b>8</b>

One Year		Credits
<b>1st Semester</b>		
DNA	100 Intro. to Oral Health Professions	1
DNA	108 Dental Science	3
DNA	110 Dental Materials	3
DNA	113 Chairside Assisting I	3
DNA	134 Dental Radiation and Practicum	3
PSY	200 Principles of Psychology	3
<b>Total</b>		<b>16</b>

<b>2nd Semester</b>		
CST	229 Intercultural Communication	3
DNA	114 Chairside Assisting II	4
DNA	119 Dental Therapeutics	1
DNA	120 Community Health	1
DNA	130 Dental Office Management	2
DNA	140 Externship	5
<b>Total</b>		<b>16</b>

<b>3rd Semester</b>		
DNA	190 Coordinated Internship	3
<b>Total</b>		<b>3</b>

**Total credits for the Certificate in Dental Assisting = 43 (Includes 8 prerequisite credits)**

## Diagnostic Medical Sonography

Associate of Applied Science Degree

Offered through MEC

**Purpose:** This curriculum is designed to prepare students to produce diagnostic images of the human body using special equipment to direct high frequency sound waves into different anatomic structures in a patient's body. The sonographer is a central member of the healthcare team and assists the radiologist in gathering diagnostic data for interpretation. NOVA's program emphasizes didactic and "hands-on" practice of sonographic techniques in a well-equipped scanning laboratory at the Medical Education Campus in Springfield, Virginia. Clinical experience is acquired at numerous area hospitals and private medical affiliates.

Students in the Diagnostic Medical Sonography degree program learn to perform an ultrasound of the Abdomen and Small Parts as well as Obstetric and Gynecologic sonography. Upon successful

completion of the degree requirements, the student will be eligible to apply to take the American Registry for Diagnostic Medical Sonography (ARDMS) examination(s) leading to credentials as a Registered Diagnostic Medical Sonographer (RDMS®).

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Admission Requirements:** Admission to the Diagnostic Medical Sonography program is competitive.

Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Review an online Diagnostic Medical Sonography information session and download a Pre-admission Advising Form.
- Attend a mandatory pre-admission advising session prior to application. Students must bring a copy of the DMS Pre-admission Advising Form with them to the pre-admission advising session.
- Complete BIO 141 and BIO 142 Anatomy and Physiology I-II with a "B" or higher.
- Complete ENG 111 College Composition I with a grade of "B" or higher.
- Complete MTH 154 Quantitative Reasoning or higher level math with a "B" or higher.
- Complete PHY 195 Topics in Acoustical Physics with a "B" or higher.
- Complete SDV 101 Orientation to Healthcare with a "B" or higher.
- Complete all courses used to satisfy the science requirements within 10 years of the semester in which verification of the DMS admission process is completed.
- Have a minimum 2.5 cumulative GPA

**Special Program Requirements:** The American Registry of Diagnostic Medical Sonography (ARDMS) applicants, candidates, and registrants are required to report their involvement in any incident that constitutes a violation of ARDMS discipline policies. First-time applicants must disclose information regarding all previous violations of ARDMS discipline policies to the ARDMS with their initial application for examination. Upon disclosing a violation of ARDMS discipline policies, all ARDMS applicants, candidates, and registrants are required to submit official documentation from the presiding court system or disciplinary body. Individuals must provide documentation that either verifies that all sentencing requirements were completed in full, or a letter from the presiding court system/disciplinary body verifying

that this case is closed and all of the requirements have been satisfied.

AARDMS conducts a “pre-application review” for individuals who wish to determine the impact of a previous violation of ARDMS discipline policies on their eligibility to apply for ARDMS certification. The Pre-Application Review Process is recommended for individuals who are not yet ready to apply for an examination. Individuals may obtain additional information regarding the pre-application process along with the appropriate forms by visiting [www.ardms.org](http://www.ardms.org).

**Completion Requirements:** All courses in the program must be completed with a grade of “C” or better before taking the next course in the sequence and to satisfy graduation requirements.

Prerequisites:		Credits
BIO	141 Human Anatomy and Physiology I	4
BIO	142 Human Anatomy and Physiology II	4
ENG	111 College Composition I	3
MTH	154 Quantitative Reasoning or higher	3
PHY	195 Topics In: Acoustic Physics	2
SDV	101 Orientation to Healthcare	1
<b>Total</b>		<b>17</b>

Two Years		Credits
1st Semester		
DMS	190 Coordinated Internship	2
DMS	206 Intro. to Sonography	3
DMS	207 Sectional Anatomy	2
DMS	208 Ultrasound Physics and Instrumentation I	2
DMS	217 Sectional Anatomy Laboratory	1
DMS	218 Ultrasound Physics and Instrumentation Lab I	1
HLT	141 Medical Terminology I	1
HLT	220 Concepts of Disease	3
<b>Total</b>		<b>15</b>

2nd Semester		
DMS	196 On-site Training in General Sonography	3
DMS	209 Ultrasound Physics and Instrumentation II	2
DMS	211 Abdominal Sonography	4
DMS	212 Obstetrical and Gynecological Sonography	4
DMS	219 Ultrasound Physics and Instrumentation Lab II	1
<b>Total</b>		<b>14</b>

3rd Semester		
DMS	231 Clinical Education I	3
DMS	241 Advanced Abdominal Sonography	3
DMS	242 Advanced Obstetrical and Gynecological Sonography	3
<sup>1</sup> ____	Humanities/Fine Arts Elective	3
<b>Total</b>		<b>12</b>

4th Semester		
DMS	222 Sonography and Registry Review	2
DMS	223 Introduction to Vascular Ultrasound	3
DMS	232 Clinical Education II	4
PSY	200 Principles of Psychology	3
<b>Total</b>		<b>12</b>

**Total credits for the Diagnostic Medical Sonography A.A.S. = 70 (includes 17 prerequisite credits)**

<sup>1</sup> See humanities/fine arts courses listed under General Education Electives.

## Diagnostic Medical Sonography: Echocardiography Specialization

Associate of Applied Science Degree

Offered through MEC

**Purpose:** The curriculum prepares students to produce diagnostic images of the heart structures and motion to diagnose cardiovascular changes. The echocardiographer uses special equipment to direct high frequency sound waves into areas of the patient’s body. The echocardiographer is a central member of the health care team and assists the radiologist in body image interpretation. Upon successful completion of degree requirements, the student will be eligible to apply to take the American Registry of Diagnostic Medical Sonography examinations leading to credentials as a Registered Diagnostic Cardiac Sonographer (RDCS®).

**Admission Requirements:** Students must:

- Comply with all general admission requirements for Allied Health Programs.
- Review an online Diagnostic Medical Sonography information session and download a Pre-admission Advising Form.
- Attend a mandatory pre-admission advising session prior to application. Students must bring a copy of the DMS Pre-admission Advising Form with them to the pre-admission advising session.
- Complete BIO 141 and BIO 142 Anatomy and Physiology I-II with a "B" or higher.
- Complete ENG 111 College Composition I with a grade of "B" or higher.
- Complete 154 Quantitative Reasoning or higher level math with a "B" or higher.
- Complete PHY 195 Topics in Acoustical Physics with a "B" or higher.
- Complete SDV 101 Orientation to Healthcare with a "B" or higher.
- Complete all courses used to satisfy the science requirements within 10 years of the semester in which verification of the DMS admission process is completed.
- Have a minimum 2.5 cumulative GPA.

**Completion Requirements:** All courses in the program must be completed with a grade of “C” or better before taking the next course in the sequence and to satisfy graduation requirements.

Prerequisites:		Credits
BIO	141 Human Anatomy and Physiology I	4
BIO	142 Human Anatomy and Physiology II	4
ENG	111 College Composition I	3
MTH	154 Quantitative Reasoning or higher	3
PHY	195 Topics In: Acoustic Physics	2
SDV	101 Orientation to Healthcare	1
<b>Total</b>		<b>17</b>

Two Years		Credits
<b>1st Semester</b>		
DMS	190 Coordinated Internship	2
DMS	206 Intro. to Sonography	3
DMS	207 Sectional Anatomy	2
DMS	208 Ultrasound Physics and Instrumentation I	2
DMS	217 Sectional Anatomy Laboratory	1
DMS	218 Ultrasound Physics and Instrumentation Lab I	1
HLT	141 Medical Terminology I	1
HLT	220 Concepts of Disease	3
	<b>Total</b>	<b>15</b>
<b>2nd Semester</b>		
DMS	160 Echocardiography I	4
DMS	196 On-site Training in General Sonography	3
DMS	209 Ultrasound Physics and Instrumentation II	2
DMS	219 Ultrasound Physics and Instrumentation Lab II	1
PSY	200 Principles of Psychology	3
	<b>Total</b>	<b>13</b>
<b>3rd Semester</b>		
DMS	231 Clinical Education I	3
DMS	250 Echocardiography II	4
DMS	265 Echocardiography Case Study Review	1
EMS	153 Basic ECG Recognition	2
	<b>Total</b>	<b>10</b>
<b>4th Semester</b>		
DMS	223 Introduction to Vascular Ultrasound	3
DMS	232 Clinical Education II	4
DMS	255 Echocardiography Registry Review	2
<sup>1</sup> ---	Humanities/Fine Arts Elective	3
	<b>Total</b>	<b>12</b>

**Total credits for the Vascular Sonography Specialization = 67 (includes 17 prerequisite credits)**

<sup>1</sup> See humanities/fine arts courses listed under General Education Electives.

## Diagnostic Medical Sonography: Vascular Sonography Specialization

Associate of Applied Science Degree

Offered through MEC

**Purpose:** The curriculum is designed to prepare students to produce diagnostic images of the blood and blood flow. The vascular sonographer uses special equipment to direct high frequency sound waves into areas of the patient's body. The vascular sonographer is a central member of the health care team and assists the radiologist in body image interpretation. Upon successful completion of degree requirements, the student will be eligible to apply to take the American Registry of Diagnostic Medical Sonography examinations leading to credentials as a Registered Diagnostic Medical Sonographer (RDMS®), Registered Diagnostic Cardiac Sonographer (RDCS®) and Registered Vascular Technologist (RVT®).

**Admission Requirements:** Students must:

- Comply with all general admission requirements for Allied Health Programs.
- Review an online Diagnostic Medical Sonography information session and download a Pre-admission Advising Form.
- Attend a mandatory pre-admission advising session prior to application. Students must bring a

copy of the ww DMS Pre-admission Advising Form with them to the pre-admission advising session.

- Complete BIO 141 and BIO 142 Anatomy and Physiology I-II with a "B" or higher.
- Complete ENG 111 College Composition I with a grade of "B" or higher.
- Complete MTH 154 Quantitative Reasoning or higher level math with a "B" or higher.
- Complete PHY 195 Topics in Acoustical Physics with a "B" or higher.
- Complete SDV 101 Orientation to Healthcare with a "B" or higher.
- Complete all courses used to satisfy the science requirements within 10 years of the semester in which verification of the DMS admission process is completed.
- Have a minimum 2.5 cumulative GPA

**Completion Requirements:** All courses in the program must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements.

Prerequisites:		Credits
BIO	141 Human Anatomy and Physiology I	4
BIO	142 Human Anatomy and Physiology II	4
ENG	111 College Composition I	3
MTH	154 Quantitative Reasoning	3
PHY	195 Topics In: Acoustic Physics	2
SDV	101 Orientation to Healthcare	1
	<b>Total</b>	<b>17</b>

Two Years		Credits
<b>1st Semester</b>		
DMS	190 Coordinated Internship	2
DMS	206 Introduction to Sonography	3
DMS	207 Sectional Anatomy	2
DMS	208 Ultrasound Physics and Instrumentation I	2
DMS	217 Sectional Anatomy Laboratory	1
DMS	218 Ultrasound Physics and Instrumentation Lab I	1
HLT	141 Medical Terminology I	1
HLT	220 Concepts of Disease	3
	<b>Total</b>	<b>15</b>
<b>2nd Semester</b>		
DMS	160 Vascular Sonography I	4
DMS	196 On-site Training in General Sonography	3
DMS	209 Ultrasound Physics and Instrumentation II	2
DMS	219 Ultrasound Physics and Instrumentation Lab II	1
PSY	200 Principles of Psychology	3
	<b>Total</b>	<b>13</b>
<b>3rd Semester</b>		
DMS	231 Clinical Education I	3
DMS	260 Vascular Sonography II	4
DMS	265 Vascular Case Study Review	1
	<b>Total</b>	<b>8</b>
<b>4th Semester</b>		
DMS	232 Clinical Education II	4
DMS	266 Vascular Registry Review	2
DMS	295 Topics in: Introduction to General Sonography	3
<sup>1</sup> ---	Humanities/Fine Arts Elective	3
	<b>Total</b>	<b>12</b>

**Total credits for the Vascular Sonography Specialization = 65 (includes 17 prerequisite credits)**

<sup>1</sup> See humanities/fine arts courses listed under General Education Electives.

## Emergency Medical Services

Associate of Applied Science Degree

Offered through MEC

**Purpose:** The curriculum is designed to develop the competencies needed to prepare the student to be certified as a Nationally Registered Emergency Medical Technician–Intermediate and/or Paramedic.

**Credit for Prior Learning:** Students in this program who hold current EMS certification may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Admission Requirements:** Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Attend a mandatory EMS department information session, held bi-monthly, or online. Check the website for dates: [www.nvcc.edu/medical](http://www.nvcc.edu/medical).
- Be 16 years of age for the EMT–Basic training (first semester); must be 18 years of age or older for EMT–Intermediate or Paramedic training.
- Hold, at a minimum, a high school or general equivalency diploma. Students may apply for dual enrollment for attendance during the first semester.
- During the 1st semester of the program, students must qualify for English 111 or higher.
- During the 1st semester of the program, students must qualify for Math 154 Quantitative Reasoning or higher.
- Have attained a 2.0 GPA at the last school attended. Dual enrollment students must maintain 2.0 GPA during concurrent high school courses.
- Have no physical or mental impairment that would render the student unable to perform all skills required for EMS training at any level.
- Undergo a national background check, including urine drug screening, with no record of any sexual crime and be at least five years past final release of any felony or drug-related convictions. Go to [www.certifiedbackground.com](http://www.certifiedbackground.com), put in code “#OR21.” Bring the receipt to campus, to the EMS administrative assistant, or any EMS faculty member, for the drug screen form. Cost is approximately \$100. This must be repeated annually.

### Completion Requirements:

- Hold a current certification in CPR – Healthcare Provider. Must hold prior to first day of class and maintain throughout the time in the program.
- After successful completion of the first semester, the following additional requirements must be achieved and maintained throughout attendance in the second through fifth semesters:
  - > Present proof of personal liability insurance, with a minimum of \$1,000,000 coverage. Proof of insurance must remain with the student at all times, while on campus and clinical properties.
  - > Provide health history and physical, including annual flu shot. Must be repeated annually.
- Complete NAS 150 Human Biology or its equivalent with a grade of “C” or better prior to entry into second semester.

**Special Program Completion Requirements:** Students must successfully attain each certification level prior to continuing in the EMS sequence (EMT–Basic after first semester, EMT–Intermediate after third semester). Continuation to Paramedic Certification requires successful completion of EMT–Intermediate testing. After successful completion of the second year, the student is eligible for NREMT–Paramedic testing. Students entering program with prior certifications must attend an information session for specific course entry requirements.

Generally, EMS courses must be taken in sequence, but general studies courses may be taken in any order, and at any time. Exceptions to this policy are discussed in the monthly information sessions. All students continuing to Paramedic Certification are required to complete the A.A.S. degree requirements by their NREMT–P test date.

- Students who receive an “I” (incomplete) grade in any of the courses in the EMS sequence must resolve the Incomplete before continuing in the EMS sequence.
- Students must receive a grade of “C” or higher in core EMS courses in order to be eligible for the National Registry certifying examinations.
- All clinical and internship requirements must be met prior to taking any Virginia and/or National Registry certifying examination(s).

**Reenrollment:** Students must follow the reenrollment requirements for all Allied Health students.

**Special Accreditation Status:** The Northern Virginia Community College EMS Program is accredited by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)) upon the recommendation of the Committee on Accreditation

of Educational Programs for the Emergency Medical Services Professions (CoAEMSP).

Commission on Accreditation of Allied Health Education Programs  
25400 US Highway 19 N., Suite 158  
Clearwater, FL 33763  
727-210-2350  
www.caahep.org

To contact CoAEMSP:  
8301 Lakeview Parkway Suite 111-312  
Rowlett, TX 75088  
214-703-8445  
FAX 214-703-8992  
www.coaemsp.org

Two Years		Credits
<b>1st Semester</b>		
EMS	111 Emergency Medical Technician–Basic	7
EMS	120 EMT–Basic Clinical	1
ENG	111 College Composition I	3
<sup>1</sup> NAS	150 Human Biology	4
<sup>2</sup> SDV	101 Orientation to Healthcare	1
	<b>Total</b>	<b>16</b>
<b>2nd Semester</b>		
EMS	151 Intro. to Advanced Life Support	4
EMS	153 Basic ECG Recognition	2
EMS	157 ALS – Trauma Care	3
EMS	170 ALS Internship I (Clinical + Field)	1
<sup>3</sup> EMS	213 ALS Skills Development	1
<sup>3</sup> HLT	250 Pharmacology	3
	<b>Total</b>	<b>14</b>
<b>3rd Semester</b>		
EMS	155 ALS – Medical Care	4
EMS	159 EMS Special Populations	3
EMS	172 ALS Clinical Internship II	2
EMS	173 ALS Field Internship II	1
<sup>4</sup> —	Social Science Elective	3
	<b>Total</b>	<b>13</b>
<b>4th Semester</b>		
EMS	201 EMS Professional Development	3
EMS	205 Advanced Pathophysiology	4
EMS	207 Advanced Patient Assessment	3
EMS	242 ALS Clinical Internship III	1
EMS	243 ALS Field Internship III	1
	<b>Total</b>	<b>12</b>
<b>5th Semester</b>		
EMS	211 Operations	2
EMS	216 Paramedic Review	1
EMS	244 ALS Clinical Internship IV	2
EMS	245 ALS Field Internship IV	1
MTH	MTH 154 Quantitative Reasoning	3
<sup>5</sup> —	Humanities Elective	3
	<b>Total</b>	<b>12</b>

**Total credits for the A.A.S. Degree in Emergency Medical Services = 67**

EMS-prefix courses must be taken in the sequence listed. General education courses may be taken in any order, but all must be successfully completed, ensuring student eligibility for A.A.S. prior to NREMT–P testing, following the fifth semester.

<sup>1</sup> NAS 150 Human Biology is the mandatory anatomy and physiology prerequisite to enter into the Advanced Life Support

curriculum. This requirement can be met by any 4-credit anatomy and physiology course, such as BIO 141, NAS 161, or equivalent. However, if students take these courses, they must complete the sequence prior to graduation. Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student's curriculum.

- <sup>2</sup> Orientation to Healthcare meets SDV requirement, which must be completed by the 16th credit. Any SDV course is acceptable for this requirement.
- <sup>3</sup> Students may substitute EMS 209 for HLT 250.
- <sup>4</sup> See social/behavioral sciences courses listed under General Education Electives.
- <sup>5</sup> Students are encouraged to take PHI 227.

## Emergency Medical Services: Emergency Medical Technician–Basic Career Studies Certificate

Offered through MEC

**Purpose:** This curriculum is designed to produce competent, entry-level Emergency Medical Technician–Basic (EMT–B) providers, who can function either in a volunteer or career fire and rescue department capacity, and service the community with basic life support care via the Emergency Medical Services (EMS) infrastructure. Upon successful completion of the program, students will be eligible for the Virginia Office of EMS written and practical certification exam. As certified EMT–B's, under the direction of an operational medical director, they can then function with a rescue squad; fire and rescue department; emergency room; local, state or federal government agencies; ski patrol; humanitarian relief organizations; or other EMS-related roles.

**Credit for Prior Learning:** Students in this program who hold current EMS certification may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

**Admission Requirements:** Prior to starting the program, applicants must do the following:

- Meet eligibility requirements as stipulated by the Virginia Office of Emergency Medical Services.
- Meet the College's general admission requirements.
- Attend and/or watch the online version of the EMS program's information session and adhere to the prerequisite requirements therein.

**Accreditation:** The EMS Program is accredited by the Commission on the Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Committee on Accreditation of Educational Programs for Emergency Medical Services Professions (CoAEMSP).

**Physical Requirements:** An EMS provider is faced with many physical and psychological challenges. Please



refer to the Virginia Office of EMS website for a more detailed functional job description to ensure being well suited for this challenging, yet rewarding pursuit: [www.vdh.state.va.us/oems](http://www.vdh.state.va.us/oems).

**Academic Requirements:** Students must complete each course with a grade of “C” or better in order to continue in the EMS sequence. Should any single grade of “D” or “F” be received, that course must be repeated before continuing in the EMS course sequence. Should a student receive two such grades, he/she will be removed for one year, and strongly encouraged to join a volunteer EMS rescue squad or get more committed to EMS in some other way. The student may then return to the EMS program, repeat the course in which a “D” or “F” was received and continue, as long as he/she passes the course on the second attempt. Should any course earn a “D” or “F” after a second attempt, the student will be removed permanently from the EMS program and counseled toward another allied health career.

**Clinical and Behavioral Requirements:** Clinical and internship courses are a critical component in any medical program, but the practice of medicine requires the strictest of safe and appropriate behaviors, when dealing with actual sick and injured patients. Students are always supervised by trained and certified professionals, and there is zero tolerance for inappropriate and/or unsafe actions or behaviors. Transportation to and from the multiple clinical and internship sites is solely the responsibility of the student. Punctuality and the wearing of appropriate uniforms are musts. Essential documentation of all patient care is also a critical element of each clinical and internship course, and grades in each course will be strongly based on each of these components.

One Year		Credits
1st Semester		
EMS	111 Emergency Medical Technician: Basic	7
EMS	120 Emergency Medical Technician: Basic Clinical	1
HLT	141 Medical Terminology I	1
HLT	250 General Pharmacology	3
NAS	150 Human Biology	4
<b>Total</b>		<b>16</b>

**Total credits for the Emergency Medical Technician–Basic Career Studies Certificate = 16**

**Special Notes:**

- EMS 111 and EMS 120 are mandatory corequisites. EMS 120 is generally held the 2nd 8 weeks of the 16-week term in which EMS 111 is held.
- EMS 120 consists of 12 hours of emergency department observation and 12 hours of ambulance ride-along.
- The EMS program offers 8–10 sections of EMT–Basic yearly, as a year-round course offering.

- Approximately 25 percent of EMT–Basic students continue immediately in EMT–Intermediate classes.
- Approximately another 25–35 percent continue into prerequisites for Advanced Life Support programs or other NOVA classes after completing EMT–Basic.

**Emergency Medical Services:  
Emergency Medical Technician–  
Intermediate**

Career Studies Certificate

Offered through MEC

**Purpose:** This curriculum is designed to produce competent, entry-level Emergency Medical Technician–Intermediate providers, who can function either in a volunteer or career fire and rescue department capacity, and service the community with advanced life support care via the Emergency Medical Services (EMS) infrastructure. Upon successful completion of the program, students will be eligible to sit for the National Registry Intermediate/99 written and practical certification exam. As certified EMT–Intermediate/99’s, under the direction of an operational medical director, graduates can then function as Advanced Life Support providers with a rescue squad, either in a volunteer or career capacity; fire and rescue department; emergency room; ambulance transport entity; local, state or federal government agency; ski patrol; humanitarian relief organization; or other EMS-related role.

**Credit for Prior Learning:** Students in this program who hold current EMS certification may be eligible for credit for prior learning. See an academic advisor.

**Admission Requirements:** Prior to starting the program, applicants must do the following:

- Meet eligibility requirements as stipulated by the Virginia Office of Emergency Medical Services.
- Meet the College’s general admission requirements.
- During the first semester of the program, students must qualify for English 111 or higher.
- During the first semester of the program, students must take Math placement test.
- Attend and/or watch the online version of the EMS program’s information session and adhere to the prerequisite requirements therein, including the provision of
  - > current EMT–Basic certification
  - > current healthcare provider certification
  - > current health physical with appropriate immunizations
  - > drug screening
  - > current background check

- During the 1st semester of the program, students must qualify for Math 151 or higher

**Accreditation:** The EMS Program is accredited by the Commission on the Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Committee on Accreditation of Educational Programs for Emergency Medical Services Professions (CoAEMSP).

**Physical Requirements:** An EMS provider is faced with many physical and psychological challenges. Please refer to the Virginia Office of EMS website for a more detailed functional job description to ensure being well suited for this challenging, yet rewarding pursuit: [www.vdh.state.va.us/oems](http://www.vdh.state.va.us/oems).

**Academic Requirements:** Students must complete each course with a grade of “C” or better in order to continue in the EMS sequence. Should any single grade of “D” or “F” be received, that course must be repeated before continuing in the EMS course sequence. Should a student receive two such grades, he/she will be removed for one year, and strongly encouraged to join a volunteer EMS rescue squad or get more committed to EMS in some other way. The student may then return to the EMS program, repeat the courses in which a “D” or “F” was received and continue, as long as he/she passes them on second attempt. Should any course earn a “D” or “F” after a second attempt, the student will be removed permanently from the EMS program and counseled toward another allied health career.

**Clinical and Behavioral Requirements:** Clinical and internship courses are a critical component in any medical program, but the practice of medicine requires the strictest of safe and appropriate behaviors, when dealing with actual sick and injured patients. Students are always supervised by trained and certified professionals, and there is zero tolerance for inappropriate and/or unsafe actions or behaviors. Transportation to and from the multiple clinical and internship sites is solely the responsibility of the student. Punctuality and the wearing of appropriate uniforms are musts. Essential documentation of all patient care is also a critical element of each clinical and internship course, and grades in each course will be strongly based on each of these components.

One Year		Credits
1st Semester		
EMS	151 Intro. to Advanced Life Support	4
EMS	153 Basic ECG Recognition	2
EMS	157 ALS: Trauma Care	3
EMS	170 ALS Internship I	1
<sup>1</sup> HLT	250 General Pharmacology	3
<b>Total</b>		<b>13</b>

2nd Semester		
EMS	155 ALS: Medical Care	4
EMS	159 ALS: Special Populations	3
EMS	172 ALS Clinical Internship II	2
EMS	173 ALS Field Internship II	1
NAS	150 Human Biology	4
<b>Total</b>		<b>14</b>

**Total credits for the Emergency Medical Technician–Intermediate Career Studies Certificate = 27**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

<sup>1</sup> Students may substitute EMS 209 for HLT 250.

### Special Notes:

- Since being a currently certified EMT–Basic is a mandatory prerequisite prior to enrollment in this program, those courses are not included.
- Courses must be taken in this sequence, and courses in each semester (except for Pharmacology) must be taken as corequisites.
- The EMS program offers all courses in both Fall and Spring Semesters, therefore program cohorts may start virtually year-round.
- A few EMS courses are offered during the Summer as well, but due to the compressed 12-week Summer Session, these courses do not constitute the “core” EMS curriculum, as a general rule.
- Credit for prior learning is available, at no cost, for students who have earned their EMT–Basic certification.

## Emergency Medical Services: Paramedic

Career Studies Certificate

Offered through MEC

**Purpose:** This curriculum is designed to produce competent, entry-level Paramedic providers, who can function either in a volunteer or career fire and rescue department capacity, and service the community with advanced life support care via the Emergency Medical Services (EMS) infrastructure. Upon successful completion of the program, students will be eligible for the National Registry Paramedic written and practical certification exam. As certified Paramedics, under the direction of an operational medical director, they can then function as Advanced Life Support providers with a volunteer or career rescue squad; fire and rescue department; emergency room; ambulance transport entity; local, state, or federal government agencies; ski patrol; humanitarian relief organizations; or other EMS-related roles.

**Credit for Prior Learning:** Students in this program who hold current EMS certification may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

**Admission Requirements:** Prior to starting the program, applicants must do the following:

- Meet eligibility requirements as stipulated by the Virginia Office of Emergency Medical Services.
- Meet the College’s general admission requirements.
- Attend and/or watch the online version of the EMS program’s information session and adhere to the prerequisite requirements therein, including the provision of
  - > current EMT–Intermediate certification
  - > current healthcare provider certification
  - > current health physical with appropriate immunizations
  - > drug screening
  - > current background check
- Have completed NAS 150 Human Biology with a grade of “C” or better.
- During the 1st semester of the program, students must qualify for Math 154 Quantitative Reasoning or higher.

**Accreditation:** The EMS Program is accredited by the Commission on the Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Committee on Accreditation of Educational Programs for Emergency Medical Services Professions (CoAEMSP).

**Physical Requirements:** An EMS provider is faced with many physical and psychological challenges. Please refer to the Virginia Office of EMS website for a more detailed functional job description to ensure being well suited for this challenging, yet rewarding pursuit: [www.vdh.state.va.us/oems](http://www.vdh.state.va.us/oems).

**Academic Requirements:** Students must complete each course with a grade of “C” or better in order to continue in the EMS sequence. Should any single grade of “D” or “F” be received, that course must be repeated before continuing in the EMS course sequence. Should a student receive two such grades, he/she will be removed for one year, and strongly encouraged to join a volunteer EMS rescue squad or get more committed to EMS in some other way. The student may then return to the EMS program, repeat the courses in which a “D” or “F” was earned and continue, as long as he/she passes them on second attempt. Should any course earn a “D” or “F” after a second attempt, the student will be removed permanently from the EMS program and counseled toward another allied health career.

**Clinical and Behavioral Requirements:** Clinical and internship courses are a critical component in any medical program, but the practice of medicine requires the strictest of safe and appropriate behaviors, when dealing with actual sick and injured patients. Students are always supervised

by trained and certified professionals, and there is zero tolerance for inappropriate and/or unsafe actions or behaviors. Transportation to and from the multiple clinical and internship sites is solely the responsibility of the student. Punctuality and the wearing of appropriate uniforms are musts. Essential documentation of all patient care is also a critical element of each clinical and internship course, and grades in each course will be strongly based on each of these components.

One Year		Credits
<b>1st Semester</b>		
EMS	201 EMS Professional Development	3
EMS	205 Advanced Pathophysiology	4
EMS	207 Advanced Patient Assessment	3
EMS	242 ALS Clinical Internship III	1
EMS	243 ALS Field Internship III	1
NAS	150 Human Biology	4
<b>Total</b>		<b>16</b>
<b>2nd Semester</b>		
EMS	211 Operations	2
EMS	213 ALS Skills Development	4
EMS	216 Paramedic Review	1
EMS	244 ALS Clinical Internship IV	2
EMS	245 ALS Field Internship IV	1
HLT	250 General Pharmacology	3
<b>Total</b>		<b>10</b>

**Total credits for the Paramedic Career Studies Certificate = 26**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

**Special Notes:**

- Courses must be taken in this sequence, and must be taken together as corequisites within a given semester.
- The EMS program offers all courses in both Fall and Spring Semesters, therefore program cohorts may start virtually year-round.
- A small contingent of EMS courses is also offered during the Summer, but due to the compressed 12-week Summer Session, these courses do not constitute the “core” EMS curriculum, as a general rule.
- Credit for prior learning is available, at no cost, for students who have earned their EMT–Basic and Intermediate certifications.

**Health Information Management**

Associate of Applied Science Degree

Offered through MEC

**Purpose:** The curriculum is designed to provide training in the management of systems to collect, store, process, retrieve, analyze, disseminate, and communicate information related to the research, planning, provision, and evaluation of healthcare services. It provides students with a unique blend of courses in information technology, business

management, and clinical knowledge. Students who possess an interest in studying diseases and therapies but who prefer not to work in a direct patient care setting find this career very rewarding. An interest in using computers to manage data is also important. Health information management professionals are experts on patient data that doctors, nurses, and other providers rely on to perform their jobs. Employment opportunities exist in all types of healthcare delivery organizations (hospitals, ambulatory care centers, home health services, and long-term care facilities) plus managed care, consulting firms, claims and reimbursement companies, and research firms. Graduates of the program are eligible to take a national certifying examination. The Registered Health Information Technician (RHIT) Certification is recognized nationwide as proof of proficiency in health information management.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Admission Requirements:** Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Complete the prerequisite courses with a grade of “C” or higher in each course.
- Complete the Health Information Management online information session at [www.nvcc.edu/medical/divisions/allied/him.html](http://www.nvcc.edu/medical/divisions/allied/him.html).
- Have satisfactory scores on the NOVA placement test to qualify for MTH 154 or higher or completion of unit 5 in a developmental math, and ENG 111.
- Provide evidence of good physical and mental health by submitting a physical exam form. The form must be completed before the start of clinical experience.

**Special Accreditation Status:** The Health Information Management Program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

**Clinical Requirements:** Students are required to complete two nonpaid professional practice experiences (PPEs)/Clinical prior to graduation. Students will be assigned a site for each clinical and will not be allowed to complete a clinical at a hospital where they are employed if they work within the HIM Department. For additional information on completion of clinicals, please see the HIM Program Office.

**Continuation Requirements:** Each course in the program major must be completed with a grade of “C” or better before taking the next course in the sequence.

<b>Prerequisites:</b>		<b>Credits</b>
<sup>1,2</sup> BIO	141 Human Anatomy and Physiology I	4
	CST 229 Intercultural Communication	3
	ENG 111 College Composition I	3
	HIM 111 Medical Terminology	3
	SDV 101 Orientation to Healthcare	1
	<b>Total</b>	<b>14</b>

<b>Two Years</b>		<b>Credits</b>
<b>1st Semester</b>		
<sup>1</sup> BIO	142 Human Anatomy and Physiology II	4
	HIM 110 Intro. to Human Pathology	3
	HIM 141 Fundamentals of Health Information Systems I	3
	HIM 260 Pharmacology for HIM	3
	<b>Total</b>	<b>13</b>

<b>2nd Semester</b>		
	HIM 130 Healthcare Information Systems	3
	HIM 142 Fundamentals of Health Information Systems II	3
	HIM 220 Health Statistics	3
	HIM 226 Legal Aspects of Health Record Documentation	2
<sup>2</sup> —	Humanities/Fine Arts Elective	3
	<b>Total</b>	<b>14</b>

<b>3rd Semester</b>		
	HIM 251 Clinical Practice I	3
	PED 116 Lifetime Fitness and Wellness	1
<sup>3</sup> —	Social Science Elective	3
	<b>Total</b>	<b>7</b>

<b>4th Semester</b>		
	HIM 229 Performance Improvement in Health Care	2
	HIM 230 Information Systems and Technology in Healthcare	3
	HIM 249 Supervision and Management Practices for HIM	3
	HIM 250 Health Data Classification Systems I	4
	<b>Total</b>	<b>12</b>

<b>5th Semester</b>		
	HIM 233 Electronic Health Record Applications	3
	HIM 252 Clinical Practice II	3
	HIM 254 Advanced Coding and Reimbursement	3
	HIM 255 Health Data Classification Systems II (CPT)	2
	HIM 280 Capstone Course	1
	<b>Total</b>	<b>12</b>

**Total credits for the A.A.S. Degree in Health Information Management = 72 (includes 14 prerequisite credits)**

<sup>1</sup> NAS 161 and 162 may be substituted for BIO 141 and 142, but individual courses may not be substituted.

<sup>2</sup> See humanities/fine arts courses listed under General Education Electives.

<sup>3</sup> See social/behavioral science courses listed under General Education Electives.

## Health Information Management: Clinical Data Coding

### Career Studies Certificate

Offered through MEC

**Purpose:** The curriculum is designed for persons who seek entry-level employment as clinical data coding specialists in healthcare organizations by providing them with knowledge in anatomy and medical terminology, skill development in ICD-9-CM and CPT coding classification systems,

database management, and clinical data abstracting processes, prospective payment systems, and reimbursement strategies. Clinical data coding specialists are in demand across the spectrum of healthcare organizations including hospitals, physician offices, insurance companies, managed care organizations, contracting groups, and accounting firms. Graduates of the certificate program are eligible to take one of two national certifying examinations administered by the American Health Information Management Association (AHIMA) to become a Certified Coding Associate (CCA), Certified Coding Specialist (CCS), or Certified Coding Specialist-Physician Office setting (CCS-P).

**Admission Requirements:** Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- View a Clinical Data Coding information session online at [www.nvcc.edu/medical/divisions/allied/him.html](http://www.nvcc.edu/medical/divisions/allied/him.html).
- Have a NOVA application on file.
- Present evidence of a high school diploma or GED.
- Have completed or qualify for ENG 111.
- Provide evidence of good physical and mental health by submitting a physical exam form and CPR certification. Both must be completed before the start of clinical experience.

The curriculum includes one coordinated practice course. Students are expected to complete the courses in the sequence outlined below.

One Year		Credits
<b>1st Semester</b>		
ENG	111 College Composition I	3
HIM	111 Medical Terminology I	3
HIM	141 Fundamentals of Health Information Systems I	3
HIM	250 Health Data Classification Systems I	4
<sup>1</sup> NAS	150 Human Biology	4
<b>Total</b>		<b>17</b>
<b>2nd Semester</b>		
HIM	110 Intro. to Human Pathology	3
HIM	196 On-Site Training	1
HIM	254 Advanced Coding and Reimbursement	3
HIM	255 Health Data Classification Systems II (CPT)	2
HIM	260 Pharmacology for HIM	3
<b>Total</b>		<b>12</b>

**Total credits for the Clinical Data Coding Career Studies Certificate = 29**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

<sup>1</sup> Students must complete NAS 150 with a “C” or higher.

## Health Information Technology

### Career Studies Certificate

Offered through MEC

**Purpose:** This curriculum is designed to produce students competent in all aspects of workflow process analysis and redesign, as it relates to the adoption, implementation, maintenance, and optimization phases of the transition to the use of an electronic health records system.

**Admission Requirements:** Prior to starting the program, the applicant must do the following:

- Comply with the College’s general admission requirements.
- Watch the online version of the program’s information session and adhere to the prerequisites outlined therein.
- Have satisfactory scores on the English placement test.
- Apply to the program and be accepted.

**Academic Requirements:** Students must complete each course with a grade of “C” or better in order to continue in the HIT sequence. Students who receive a “D” or “F” in a course must repeat that course before continuing in the HIT course sequence. If students receive two such grades, they will be removed from the program.

One Year		Credits
<b>1st Semester</b>		
HIT	100 Intro. to the Healthcare Delivery System	1
HIT	130 Intro. to Computers in Healthcare	3
HIT	141 Intro. to Healthcare and Health-IT in the U.S.	3
HIT	132 Health-IT Infrastructure Development	3
<sup>1</sup> HLT	141 Intro. to Medical Terminology	1
SDV	101 Orientation to Health Professions	1
<b>Total</b>		<b>12</b>
<b>2nd Semester</b>		
HIT	229 Performance Improvement and Data Usage in Healthcare	2
HIT	230 Computer Applications in Healthcare	3
HIT	233 Working with Electronic Health Records	3
HIT	235 Emerging Technologies in Health-IT	3
<b>Total</b>		<b>11</b>

**Total credits for the Health Information Technology Career Studies Certificate = 23**

<sup>1</sup> Licensed healthcare providers wishing to challenge this course must work with their academic advisor.

## Health Science Career Studies Certificate

See Programs of Study under “H”



## Massage Therapy

### Career Studies Certificate

Offered through MEC

**Purpose:** This program is designed to prepare students for certification and employment as massage therapists in a wide variety of environments, including hospitals and clinics, doctor and chiropractic offices, sports and fitness facilities, corporate offices, and beauty and skin care salons and spas. Graduates will be prepared to take the National Certification Examination in Therapeutic Massage and Bodywork. The National Certification Board for Therapeutic Massage and Bodywork requires all applicants to have completed at least 500 in-class clock hours of formal training prior to taking the exam. Successful completion of the exam and certification is required to practice massage therapy in Virginia.

**Accreditation:** NOVA's Massage Therapy Program has been approved by the AMTA, American Massage Therapy Association, and the NCBTMB, National Certification Board for Therapeutic Massage and Bodywork. The NCBTMB certifies students to take their national exam, which is used by all states as part of licensing individuals to practice massage. Individual states may have additional requirements for licensure.

**Program Admission Requirements:** Unless otherwise specified, applicants must meet all of the following requirements to be admitted to the program:

- Be admitted to NOVA.
- Be 18 years of age or older, or have program director approval.
- Qualify for or have completed ENG 111.
- Complete HLT 170 with a grade of "C" or better.
- Complete NAS 150 or NAS 161 or BIO 141 with a grade of "C" or better.
- Provide evidence of good physical and mental health, as substantiated by a completed Pre-Admission Health History and Physical for Health Technology Form (125-007) signed by a licensed physician or nurse practitioner. This must be submitted prior to entering program courses. Applicants must be free of any physical and/or mental conditions that might adversely affect their acceptance or performance in the program. Students with pre-existing physical and/or mental conditions that might adversely affect their acceptance or performance in the program who do not self-disclose this information will be subject to dismissal from the program.
- Provide full disclosure of any criminal background. Students with criminal convictions who do not self-disclose this information are subject to dismissal from the program.

- Complete a program information session and/or interview with the program director/designated instructor and signed program guidelines.

### Responsibilities of Massage Therapy

#### Program Students:

- Students must demonstrate absolute academic integrity both in the classroom and in clinical practice to prepare them for the high ethical standards required of massage therapists. Therefore, cheating, attempting to cheat, plagiarizing, lying, stealing academic work which includes secured tests or related materials, submitting papers purchased or written by others, or failing to report an occurrence of academic dishonesty or any violation of this honor code may subject the student to the College's disciplinary procedures as defined in the NOVA Student Handbook.
- Students in the Massage Therapy Program incur a variety of additional expenses. These include, but are not limited to, the cost of accessories and travel to clinical assignments. Students are also responsible for state certification and national accreditation application and testing fees.
- Students are required to complete learning experiences at local hospitals and clinics, doctor and chiropractic offices, sports and fitness facilities, corporation offices, and beauty and skin care salons, and spas and other community-based programs. Students may be required to attend both day and/or evening and weekend clinical assignments.
- Students must provide their own transportation to clinical assignments. Strict attendance is required at clinical sites.

**Continuation Requirements:** Program faculty and clinical affiliates reserve the right to recommend, through appropriate channels, withdrawal of any student who exhibits unsafe performance or non-adherence to prescribed clinical affiliate policies and procedures.

**Completion Requirements:** All courses in the program must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements.

Prerequisites:		Credits
HLT	170 Intro. to Massage	1
NAS	150 Human Biology or NAS 161 Health Science I or BIO 141 Human Anatomy and Physiology I	4
<b>Total</b>		<b>5</b>

One Year		Credits
<b>1st Semester</b>		
CST	126 Interpersonal Communication	3
<sup>1</sup> HLT	105 Cardiopulmonary Resuscitation	1
HLT	180 Therapeutic Massage I	3
	<b>Total</b>	<b>7</b>
<b>2nd Semester</b>		
HLT	190 Coordinated Internship	2
HLT	220 Concepts of Disease	3
HLT	280 Therapeutic Massage II	3
PED	116 Lifetime Fitness and Wellness	1
	<b>Total</b>	<b>9</b>
<b>3rd Semester</b>		
HLT	195 Entrepreneurship for the Massage Therapist	1
HLT	281 Therapeutic Massage III	3
	<b>Total</b>	<b>4</b>

**Total credits for the Health Information Technology Career Studies Certificate = 20 (25 including prerequisites)**

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17–24 must complete an SDV course within their first year at NOVA.

<sup>1</sup> May be waived with proof of CPR certification. Another 1-credit course must be substituted.

Other courses not required but highly recommended for Massage Therapy students are

- PHI 227 Biomedical Ethics (2 credits)
- PTH 151 Musculoskeletal Structure and Function (5 credits)

## Medical Laboratory Technology: Medical Laboratory Assistant (MLA)

Career Studies Certificate

Offered through MEC

**Purpose:** The program is designed to prepare personnel who collect, process, and perform selected tests on samples for medical laboratory analysis. Medical Laboratory Assistants (MLAs) work in hospitals, medical clinics, and reference laboratories. The curriculum includes learning experiences: on-campus, online, and, in partnership, with affiliated clinical laboratories. Graduates are eligible to sit for the American Society for Clinical Pathologists (ASCP) Board of Certification (BOC) national examination to become certified as a Medical Laboratory Assistant (MLA).

**Admission Requirements:** Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Attend or view a MLA information session.
- Have a NOVA application on file.
- Hold a high school diploma or GED.
- Have completed or qualify for ENG 111.
- Have minimum 2.0 curricular GPA.

**Credit for Prior Learning:** Students in this program who have been certified as a phlebotomy technician by the American Society for Clinical Pathology (ASCP) Board of Certification (BOC) are eligible for credit for prior learning in MDL 105 and MDL 106. See an academic advisor for further information.

**Continuation Requirements:** Each course in this program must be completed with a grade of “C” or better before taking the next course in the sequence.

<b>1st Semester</b>		
MDL	105 Phlebotomy	3
	<b>Total</b>	<b>3</b>
<b>2nd Semester</b>		
<sup>1</sup> ENG	111 College Composition I	3
<sup>2</sup> HLT	141 Intro. to Medical Terminology	1
MDL	100 Intro. to Medical Laboratory Technology	2
MDL	106 Clinical Phlebotomy	4
MDL	140 Clinical Urinalysis	2
	<b>Total</b>	<b>12</b>
<b>3rd Semester</b>		
HIM	130 Healthcare Information Systems	3
HLT	145 Ethics for Healthcare Personnel	2
MDL	130 Basic Microbiology	3
MDL	196 On-Site Training	2
MDL	260 Laboratory Instrumentation	2
	<b>Total</b>	<b>12</b>

**Total credits for the PCSC in Medical Laboratory Assistant = 27**

<sup>1</sup> May substitute ENG 112 or higher.

<sup>2</sup> May substitute HIM 111.

## Medical Laboratory Technology Associate of Applied Science Degree

Offered through MEC

**Purpose:** The curriculum is designed to prepare students to perform essential laboratory testing on blood and body fluids that is critical to the detection, diagnosis, and treatment of disease. In a medical laboratory, the medical laboratory technician (MLT) is part of a team of highly skilled pathologists, technologists, and phlebotomists working together to determine the presence, extent or absence of disease, and helping to evaluate the effectiveness of treatment. This program emphasizes “hands-on” practice of laboratory methods in a state-of-the-art laboratory at the Medical Education Campus in Springfield, followed by clinical experience at various affiliating healthcare organizations.

Upon completion of the program, graduates will be eligible to take the American Society for Clinical Pathology (ASCP) Board of Certification examination and other national certification examinations offered at the technician level.

**Credit for Prior Learning:** Students in this program who have completed a military laboratory training

program and hold Medical Laboratory Technician (MLT) Certification from the American Society for Clinical Pathology (ASCP) Board of Certification (BOC) are eligible for credit for prior learning in the major coursework. See an academic advisor for further information.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but transfer may be an option for certified MLTs. Students interested in transfer should contact an academic advisor early in their program.

**Career Opportunities:** Employment for medical laboratory technicians is available in hospital laboratories, private laboratories, physicians' office laboratories, health department laboratories, and industrial medical laboratories.

**Admission Requirements:** Admission to the Medical Laboratory Technology program is competitive. Applicants must do the following:

- Comply with all general admission program requirements.
- View the online Medical Laboratory Technology information session.
- Be eligible for MTH 161 as shown by satisfactory scores on NOVA placement tests.
- Complete with a grade of "C" or higher: BIO 141, CHM 111, ENG 111, and SDV 101.
- Complete the TEAS (Test of Essential Academic Skills) test.
- Document a GPA of at least 2.0 at the last school attended.

**Continuation Requirements:** Each course in the program major must be completed with a grade of "C" or better before taking the next course in the sequence.

**Special Accreditation Status:** The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS); 5600 North River Road, Suite 720, Rosemont, Illinois 60018; Phone: 773-714-8880; Fax: 773-714-8886; [www.naacls.org](http://www.naacls.org).

Prerequisites:		Credits
<sup>1</sup> BIO	141 Human Anatomy and Physiology I	4
CHM	111 General Chemistry I	4
<sup>2</sup> ENG	111 College Composition I	3
SDV	101 Orientation to Healthcare	1
<b>Total</b>		<b>12</b>

Two Years		Credits
1st Semester		
<sup>3</sup> BIO	142 Human Anatomy and Physiology II	4
<sup>4</sup> CST	229 Intercultural Communication	3
MDL	101 Intro. to Medical Laboratory Techniques	3
MDL	125 Clinical Hematology I	3
MDL	140 Clinical Urinalysis	2
<b>Total</b>		<b>15</b>

2nd Semester		Credits
MDL	130 Basic Clinical Microbiology	3
MDL	215 Immunology	2
MDL	225 Clinical Hematology II	3
MDL	260 Laboratory Instrumentation	2
MDL	263 Clinical Chemistry and Instrumentation III	3
<b>Total</b>		<b>13</b>

3rd Semester		Credits
MDL	266 Clinical Chemistry Techniques	3
MDL	276 Clinical Hematology Techniques	3
<b>Total</b>		<b>6</b>

4th Semester		Credits
MDL	216 Blood Banking	4
MDL	243 Intro. to Clinical Molecular Diagnostics	2
MDL	251 Clinical Microbiology I	3
<sup>5</sup> —	Social Science Elective	3
<b>Total</b>		<b>12</b>

5th Semester		Credits
<sup>6</sup> —	Humanities/Fine Arts Elective	3
MDL	277 Clinical Immunohematology and Immunology Technique	4
MDL	278 Clinical Microbiology Techniques II	4
MDL	281 Clinical Correlations	1
<b>Total</b>		<b>12</b>

**Total credits for the A.A.S. Degree in Medical Laboratory Technology = 70 (includes 12 prerequisite credits)**

- <sup>1</sup> May substitute BIO 231.
- <sup>2</sup> May substitute ENG 112 or higher.
- <sup>3</sup> May substitute BIO 232.
- <sup>4</sup> May substitute CST 110 or CST 126.
- <sup>5</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>6</sup> See humanities/fine arts courses listed under General Education Electives.

## Medical Laboratory Technology: Phlebotomy

Career Studies Certificate

Offered through MEC

**Purpose:** The program is designed to prepare personnel who collect and process blood and other samples for medical laboratory analysis. Phlebotomists work in hospitals, medical clinics, commercial laboratories, and in other settings where blood is collected from patients. The curriculum includes learning experiences in both on-campus laboratories and affiliated clinical laboratories. Graduates are eligible to sit for the national examination to become certified as a phlebotomy technician.

**Admission Requirements:** Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Attend a Phlebotomy information session.
- Have a NOVA application on file.
- Hold a high school diploma or GED.
- Have completed or qualify for ENG 111.
- Have minimum 2.0 curricular GPA.

**Credit for Prior Learning:** Students in this program who have been certified as a phlebotomy technician by the American Society for Clinical Pathology (ASCP) Board of Certification (BOC) and/or who have documented extensive experience in phlebotomy are eligible for credit for prior learning in the major clinical course. See an academic advisor for further information.

**Continuation Requirements:** Each course in this program must be completed with a grade of “C” or better before taking the next course in the sequence.

One Semester		Credits
<sup>1</sup> ENG	111 College Composition I	3
HIM	130 Health Information Systems	3
<sup>2</sup> HLT	141 Intro. to Medical Terminology	1
HLT	145 Ethics for Health Care Personal	2
MDL	105 Phlebotomy	3
MDL	106 Clinical Phlebotomy	4
<b>Total</b>		<b>16</b>

**Total credits for the Phlebotomy Career Studies Certificate = 16**

<sup>1</sup> May substitute ENG 112 or higher.

<sup>2</sup> May substitute HIM 111.

## Nursing

Associate of Applied Science Degree

Offered through MEC

**Purpose:** The program is designed to prepare students to participate as contributing members of the healthcare team, rendering direct care to patients in a variety of healthcare facilities and agencies. Upon satisfactory completion of the program, students will be eligible to apply to take the National Council Licensure Examination (NCLEX-RN®) leading to state licensure as a registered nurse (RN) and are qualified to assume registered nurse positions in hospitals, nursing homes, clinics, physicians’ offices, HMOs, and other community-based settings.

The nursing program is a 5–semester program: first semester students take the pre-requisite course work to prepare the student for applying to the program and for the study of the nursing courses. Then there are 4 semesters of nursing course work (LEVELS 1-4).

Information about the nursing program and the application process can be found online. Admission to the Nursing program is competitive.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program; however, NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

## Admission Requirements (Academic Year 2018–2019):

- Be admitted to NOVA.
- Be 18 years of age or older.
- Comply with all general admission requirements for Allied Health and Nursing Programs listed for the Medical Education programs section.
- Complete an online Nursing information session.
- Meet the specific requirements for admission to the Nursing Program. The program admission process is competitive. To be considered for admission, applicants must
  - > Hold a high school diploma or General Educational Development Test certification (GED®).
  - > Have completed one unit of high school-level algebra and two units of science (1 unit of biology and 1 unit of chemistry) with a grade of "C" or higher.
  - > Qualify for MTH 154 through acceptable scores on the College math placement test. This requirement must be met prior to the student sitting for the Nursing Pre-Admission Test.
  - > Complete PSY 230 with a “C” or higher.
  - > Complete BIO 141 and BIO 142 with a "C" or higher.
  - > Complete ENG 111 with a grade of "C" or higher.
  - > Complete SDV 101 Orientation to Healthcare or SDV elective with a grade of "C" or higher. (grades for these courses must be posted prior to applying)
  - > Have minimum 2.5 cumulative GPA.
- Successfully complete and achieve satisfactory scores on the Nursing Pre-Admission Test. 3 sections of the ATI-TEAS tests® are necessary to complete with minimum scores of 78% or higher on each section: English, Mathematics and Reading. Students may take the test three times only. The latest result must be within three years of admission to the Nursing Program.
- Successfully complete the American Heart Association Healthcare Provider CPR course prior to registering for the first nursing course.
- Submit a completed health examination/physical form signed by a licensed physician or nurse practitioner with all required immunizations prior to beginning the Nursing Program.

**Special Notation for Admission:** The state of Virginia may prohibit anyone from sitting for the Nursing Licensure Examination who has been convicted of a felony or of crimes(s) involving theft, drug offenses or physical harm to another, or misdemeanors as designated by VBON, therefore NOVA will not consider persons convicted of the above offenses for admission to the NOVA Nursing program.

**Special Program Requirements:** Once enrolled in the Nursing program all students must maintain a grade of "C" (78% or higher) in all nursing courses to continue in the program. This includes lecture, nursing lab and clinical components. In addition, students must achieve a "C" or higher in all general education courses. First year students must complete BIO 150 no later than the second semester/LEVEL 1 nursing as co-requisite to NSG 100, NSG 106, NSG 130, NSG 200; General Education elective no later than third semester/LEVEL 2 nursing, as co-requisite NSG 152 and NSG 170 respectively; CST elective (229 or 110, 126) must be taken no later than the fourth semester/LEVEL 3 nursing, as co-requisite NSG 210 and NSG 211 respectively; and HUM elective no later than the 5th semester/LEVEL 4 nursing, as co-requisite NSG 230, NSG 252 and NSG 270 respectively.

**Accreditation & Approval Status:** The NOVA Nursing Curriculum is fully approved by the Virginia Board of Nursing (VBON) Perimeter Center, 9960 Mayland Drive, Suite 300, Henrico, Virginia 23233 and accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road, NE, Suite 850, Atlanta, Georgia, 30326. Telephone 404-975-5020. View NCLEX-RN pass rates for the last five years go to online.

**Licensure Requirements:** The Virginia Board of Nursing reserves the right to deny licensure to any candidate who has been found guilty of a misdemeanor or felony.

**LPN to RN Transition:** The NUR 115 LPN Transition and NUR 116 Selected Nursing Concepts: Skills courses will no longer be offered.

**Readmission:** Students who leave the Nursing program and wish to be re-admitted must meet the current Catalog's requirements for admission. Any developmental studies that were prescribed at the time the student left the program must have been satisfactorily completed. Students wishing to be re-admitted to NOVA's nursing program will be required to seek approval of the Dean or their designee. Readmission is competitive and based on space availability.

**Transfer from Other Institutions:** Nursing credits earned at other institutions are reviewed by the Dean or their designee to determine if the courses in question apply to the curriculum and/or if substitutions may be made within the curriculum. Students who transfer to NOVA with prior nursing courses may be required to demonstrate skills competencies.

## NURSING PROGRAM (Common Curriculum Program)

Classes are taken on campus and via a combination of synchronous (live) and asynchronous (anytime) online activities including in-person nursing laboratory and clinical practice. Nursing courses must be taken in the order outlined below for classes entering in 2018-2019.

Prerequisites:		Credits
<sup>1,2</sup> BIO	141 Anatomy and Physiology I	4
<sup>1,2</sup> BIO	142 Anatomy and Physiology II	4
ENG	111 College Composition I	3
PSY	230 Developmental Psychology	3
SDV	101 Orientation to Healthcare	1
<b>Total</b>		<b>15</b>

Two Years		Credits
<b>1st Semester--LEVEL 1 Nursing</b>		
BIO	150 Microbiology	4
NSG	100 Introduction to Nursing Concepts	4
NSG	106 Competencies for Nursing Practice	2
NSG	130 Professional Concepts	1
NSG	200 Health Promotion and Assessment	3
<b>Total</b>		<b>14</b>

<b>2nd Semester--LEVEL 2 Nursing</b>		
<sup>3</sup> —	General Elective	3
NSG	152 Health Care Participant	3
NSG	170 Health/Illness Concepts	6
<b>Total</b>		<b>12</b>

<b>3rd Semester--LEVEL 3 Nursing</b>		
<sup>4</sup> CST	229 Intercultural Communication	3
NSG	210 Health Care Concepts I	5
NSG	211 Health Care Concepts II	5
<b>Total</b>		<b>13</b>

<b>4th Semester--LEVEL 4 Nursing</b>		
NSG	230 Advanced Professional Nursing Concept	2
NSG	252 Complex Health Care Concepts	4
NSG	270 Nursing Capstone	4
<sup>5</sup> —	Humanities/Fine Arts Elective	3
<b>Total</b>		<b>13</b>

The accelerated online/hybrid curriculum is the same as the traditional track but has no summer break.

**Total credits for the A.A.S. Degree in Nursing = 67  
(includes 15 prerequisite credits)**

- Students entering in academic years 2018-2019 and 2019-2020 only, may substitute NAS 161 and NAS 162 to meet the BIO 141, BIO 142 requirements. Students who have taken the NAS sequence will be required to take BIO 150.
- Students may use one of the following course sequences to meet the BIO 141/142/150 requirement: BIO 141, BIO 142, and BIO 205, or BIO 231, BIO 232, and BIO 150, or BIO 231, BIO 232, and BIO 205.
- Suggested courses include: ENG 112, HLT 250, MTH 154.
- Students may select from CST 110, CST 115 or CST 126.
- See humanities/fine arts courses are listed under General Education Electives.

## Occupational Therapy Assistant

Associate of Applied Science Degree

Offered through MEC

**Purpose:** The program is designed to provide students with the philosophical, theoretical, and



clinical knowledge necessary to provide quality occupational therapy. This curriculum is designed to prepare students to assist and collaborate with occupational therapists in providing occupational therapy treatments and procedures. Students will participate in classroom and fieldwork experiences in this program. Upon successful completion of the program, graduates must take and pass a national board exam and complete the licensing process in order to begin a career as an Occupational Therapy Assistant. Graduates may, in accordance with state laws, assist in development of treatment plans; carry out routine functions, direct activity programs, and document the progress of treatments.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Admission Requirements:** Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Attend an in-person Occupational Therapy Assistant information session within one year of application. Visit the website at [www.nvcc.edu/medical/divisions/allied/occupational-therapy-assistant.html](http://www.nvcc.edu/medical/divisions/allied/occupational-therapy-assistant.html).
- Be a high school graduate or have obtained a GED.
- Complete BIO 141–142 Human Anatomy and Physiology I–II, ENG 111 College Composition I, HLT 141 Introduction to Medical Terminology, and SDV 101 Orientation to Healthcare with a “C” or higher.
- Qualify for MTH 154 or higher on the NOVA math placement test. This requirement must be met prior to applying to the OTA program.
- Maintain a curricular GPA of 2.5 or higher at the last school or college attended (with a minimum of 13 credits).
- Complete at least 16 hours of observation time with an occupational therapist (OTR) or a certified occupational therapy assistant (COTA). Observation hours must be documented and signed by the OTR or COTA who is supervising the applying student on a form found on the website at [www.nvcc.edu/medical/divisions/allied/occupational-therapy-assistant.html](http://www.nvcc.edu/medical/divisions/allied/occupational-therapy-assistant.html).
- Complete a video statement for a video statement committee.
- Assure that all previous transcripts are accounted for and are on file at NOVA prior to the program application deadline date. These transfer credits

must be evaluated before any transfer credit is granted. Application acceptance dates will be posted on the website once established. Admission will be on a competitive placement basis of fully qualified candidates. Students will also receive special consideration if they have earned the Health Science Career Studies Certificate, if more than 25 hours of observation are accumulated, and/or if documented work experience as a rehabilitation technician or an OT aide is provided.

- Students are notified in writing of acceptance into the program following the timely submission of a completed application. Once accepted, students must have current CPR certification; must complete a basic first aid course, a documented medical examination, criminal background check, and a 12-panel drug screen; and must maintain a 2.5 GPA or higher to remain in good standing.

Highly qualified students can apply during the next application period. In the meantime, students interested in the OTA program are encouraged to attend a face-to-face information session. Dates can be found at [www.nvcc.edu/medical/divisions/allied/occupational-therapy-assistant.html](http://www.nvcc.edu/medical/divisions/allied/occupational-therapy-assistant.html). Follow the steps in preparation for competitive placement into the OTA program. Competitive eligibility for the OTA program does not guarantee admission.

**Continuation Requirements:** Students must comply with all continuation requirements for Allied Health and Occupational Therapy Assistant students.

**Transfer Placement:** OTA credits earned at other institutions will be reviewed by the program director of the OTA program to determine if any course substitutions may be warranted within the curriculum. Students wishing to transfer into the NOVA OTA program will be required to satisfactorily complete a skill competency assessment before being accepted into the OTA program. Transfer students must additionally be in good academic standing and must provide a written reference from the program director of the previous institution as well as from a clinical educator as applicable. All transfer students must meet all of the OTA program application and admission requirements before being considered in the competitive admissions process.

**Special Accreditation Status:** The Occupational Therapy Assistant Program at Northern Virginia Community College is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE®) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, Suite 200, Bethesda, MD

20814–3449. ACOTE's telephone number c/o AOTA is 301–652–AOTA. ACOTE can be found online at [www.acoteonline.org](http://www.acoteonline.org). Upon graduation, students will be eligible to sit for the national certification examination for the occupational therapy assistant administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this exam, the individual will be a Certified Occupational Therapy Assistant (COTA). In addition, most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination. Note that a felony conviction could affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure.

Prerequisites:		Credits
BIO	141 Human Anatomy and Physiology I	4
BIO	142 Human Anatomy and Physiology II	4
ENG	111 College Composition I	3
HLT	141 Intro. to Medical Terminology	1
SDV	101 Orientation to Healthcare	1
	<b>Total</b>	<b>13</b>

Two Years		Credits
<b>1st Semester</b>		
<sup>1</sup> —	Humanities/Fine Arts Elective	3
OCT	100 Intro. to Occupational Therapy	3
OCT	205 Therapeutic Media	2
OCT	225 Neurological Concepts for OTA	4
PSY	200 Principles of Psychology	3
	<b>Total</b>	<b>15</b>

<b>2nd Semester</b>		
OCT	190 Coordinated Internship (Pediatrics)	1
OCT	203 Occupational Therapy with Developmental Disabilities	4
OCT	207 Therapeutic Skills	3
PSY	215 Abnormal Psychology	3
PSY	230 Developmental Psychology	3
	<b>Total</b>	<b>14</b>

<b>3rd Semester</b>		
OCT	190 Coordinated Internship in OT (Psychosocial Dysfunction)	1
OCT	195 Topics in Evidence Based Practice in Occupational Therapy	1
OCT	201 Occupational Therapy with Psychosocial Dysfunction	3
	<b>Total</b>	<b>5</b>

<b>4th Semester</b>		
OCT	190 Coordinated Internship in OT (Physical Dysfunction)	1
OCT	202 Occupational Therapy and Physical Disability	4
OCT	206 Dyadic and Group Dynamics	3
OCT	208 Occupational Therapy Service Management	3
OCT	210 Assistive Technology in Occupational Therapy	2
	<b>Total</b>	<b>13</b>

<b>5th Semester</b>		
OCT	290 Coordinated Internship in OT	4
OCT	290 Coordinated Internship in OT	4
OCT	295 Trends in Professional Issues in Occupational Therapy Practice	1
	<b>Total</b>	<b>9</b>

**Total credits for the A.A.S. Degree in Occupational Therapy Assistant = 69 (includes 13 prerequisite credits)**

<sup>1</sup> See humanities/fine arts courses listed under General Education Electives.

## Phlebotomy Career Studies Certificate

See program under Medical Laboratory Technology

## Physical Therapist Assistant

Associate of Applied Science Degree

Offered through MEC

**Purpose:** The program is designed to prepare students to utilize exercise, specialty equipment, and other treatment procedures to prevent, identify, correct, and alleviate movement dysfunction. The program design provides students with the philosophical, theoretical, and clinical knowledge necessary to deliver high-quality patient care. Ultimately, students are prepared as skilled technical healthcare providers who work under the direction and supervision of a physical therapist to provide selected components of physical therapy treatments. Upon successful completion of the program, students must take and pass a licensing examination to begin their career as a physical therapist assistant (PTA). Students are prepared for employment in a variety of healthcare settings, including acute care hospitals, outpatient clinics, extended care facilities, rehabilitation centers, contract agencies, and schools.

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Admission Requirements:** Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Attend a Physical Therapist Assistant information session. Call the program office at 703–822–6570 for scheduled dates or visit [www.nvcc.edu/medical/divisions/allied/therapyassistant.html](http://www.nvcc.edu/medical/divisions/allied/therapyassistant.html).
- Have completed NAS 150 Human Biology or BIO 141–142 Human Anatomy and Physiology I–II with a grade of “B” or higher.
- Have completed HLT 141 Medical Terminology with a grade of “B” or higher.
- Have a minimum 2.5 curricular GPA.
- Be 18 years of age.
- Complete ENG 111 with a grade of “B” or higher.
- Have satisfactory scores on NOVA's placement tests to qualify for MTH 154.
- Successfully complete and achieve satisfactory scores on the TEAS (Test of Essential Academic Skills) test. Students may only take the test three times. The latest result must be within two years of application to the PTA Program.
- Submit the NOVA PTA Program Clinic Observation

Form documenting the minimum requirement of 4 hours of observation in a PT clinic.

**Special Accreditation Status:** The Physical Therapist Assistant program at Northern Virginia Community College is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 111 North Fairfax Street, Alexandria, VA 22314; telephone: 703-706-3245; e-mail: [accreditation@apta.org](mailto:accreditation@apta.org); website: [www.capteonline.org](http://www.capteonline.org).

**Program Application Requirements:** Completion of the above steps constitutes a completed PTA program application. Completed PTA program applications will be accepted via certified mail to the Medical Education Student Services Center from March 1 through March 15 for the following semester. Students are notified in writing of acceptance into the program following submission of a completed application.

**Professional Standards Requirements:** Students are expected to consistently demonstrate professional behavior in the classroom, laboratory, and during clinical affiliations. Professional behavior must be consistent with the APTA Standards of Ethical Conduct for the Physical Therapist Assistant and the Generic Abilities outlined in the *PTA Program Handbook*. Behavior inconsistent with the Standards of Ethical Conduct for the Physical Therapist Assistant and/or the Generic Abilities will result in dismissal from the program.

**Additional Requirements:** In addition to the admission requirements for Allied Health Programs, upon acceptance students must complete a basic first aid course prior to admission into the Physical Therapist Assistant Program.

**Transfer Placement:** PTA credits earned at other institutions are reviewed by the program director to determine if any course substitutions may be made within the curriculum. Students who wish to transfer to NOVA's PTA program will be required to satisfactorily complete a skill competency assessment prior to acceptance into the program. Transfer students must be in good academic standing and provide a written reference from the director of their program as well as a clinical instructor. Transfer students must meet all PTA program application and admission requirements.

**Laboratory Examination Requirements:** Each student must achieve a minimum passing score of 75% on each laboratory practical exam. In the event that a lab practical is failed, a maximum of one reexamination, per examination, will be permitted. A student who does not achieve a 75% or greater on the second

attempt will fail the class and be administratively withdrawn from the program.

**Continuation Requirements:** Each course in the program major must be completed with a grade of "C" or better before taking the next course in the sequence.

**Reenrollment:**

1. Students in good standing may be permitted to reenroll in the PTA curriculum on a space-available basis, with permission of the program director.
2. Students who leave the program for one year or more for either personal or academic reasons are required to demonstrate proficiency in all previously enrolled skills courses prior to reentering the program. "Practical exams" are administered and scheduled by the program faculty. A written exam will be required.
3. Students who leave the program for any period of time for medical reasons are required to submit evidence of good physical and mental health, as substantiated by a newly completed Pre-Admission Health History and Physical for Allied Health and Nursing Form (125-007) signed by the primary physician responsible for their healthcare.

<b>Prerequisites:</b>		<b>Credits</b>
ENG	111 College Composition	3
HLT	141 Intro. to Medical Terminology	1
<sup>1</sup> NAS	150 Human Biology	4
<b>Total</b>		<b>8</b>

<b>Two Years</b>		<b>Credits</b>
<b>1st Semester</b>		
PTH	105 Intro. to Physical Therapy	3
PTH	121 Therapeutic Procedures I	5
PTH	151 Musculoskeletal Structure and Function	5
SDV	101 Orientation to Healthcare	1
<b>Total</b>		<b>14</b>

<b>2nd Semester</b>		
PED	220 Adult Health and Development	2
PSY	200 Principles of Psychology	3
PTH	115 Kinesiology for the Physical Therapist Assistant	5
PTH	122 Therapeutic Procedures II	5
<b>Total</b>		<b>15</b>

<b>3rd Semester</b>		
<sup>2</sup> MTH	Elective	3
PTH	131 Clinical Education I	3
<b>Total</b>		<b>6</b>

<b>4th Semester</b>		
<sup>3</sup> _____	Humanities/Fine Arts Elective	3
PTH	225 Rehabilitation Procedures	5
PTH	231 Clinical Education II	5
<b>Total</b>		<b>13</b>

<b>5th Semester</b>		
PTH	210 Psychological Aspects of Therapy	2
PTH	227 Pathological Conditions	3
PTH	232 Clinical Education III	5
PTH	245 Professional Issues	3
<b>Total</b>		<b>13</b>

**Total credits for the A.A.S. Degree in Physical Therapist Assistant = 69 (includes 8 prerequisite credits)**

<sup>1</sup> BIO 141–142 Human Anatomy and Physiology I–II may be substituted for NAS 150.

<sup>2</sup> Select from any MTH course 154 or above.

<sup>3</sup> See humanities/fine arts courses listed under General Education Electives.

## Radiation Oncology

Associate of Applied Science

Distance degree program offered through  
Virginia Western Community College

Through a collaborative arrangement with Virginia Western Community College (VWCC), NOVA students have access to the VWCC Radiation Oncology Certificate Program. NOVA offers some of the required courses, and students will take the rest of the ROC courses through VWCC. General education and clinical courses are offered through NOVA and clinical affiliations are in Northern Virginia. Didactic classes are offered through distance learning from VWCC. Students must enroll in the program through VWCC and, upon completion, students will be VWCC graduates. For more information, go to [www.virginiawestern.edu/academics/health/oncology/index.php](http://www.virginiawestern.edu/academics/health/oncology/index.php) or call VWCC Health Professions Office at 540–857–7307.

## Radiography

Associate of Applied Science Degree

Offered through MEC

**Purpose:** The curriculum is designed to prepare students to produce diagnostic images of the human body through safe application of x-radiation. The radiographer is a central member of the healthcare team and assists the radiologist, a physician specialized in body image interpretation. Upon successful completion of degree requirements, the student will be eligible to take the American Registry of Radiologic Technology (ARRT) examination leading to certification as a Registered Technologist in Radiography: A.S., R.T.(R).

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Admission Requirements:** Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Review the online information session at [www.nvcc.edu/medical/divisions/allied/radiography.html](http://www.nvcc.edu/medical/divisions/allied/radiography.html).

- Review competitive admission and application deadlines at [www.nvcc.edu/medical/divisions/allied/radiography.html](http://www.nvcc.edu/medical/divisions/allied/radiography.html).
- Qualify for MTH 154.
- Have completed BIO 141 and BIO 142 with a grade of “B” or higher.
- Have completed ENG 111 with a “B” or higher.
- Have completed SDV 101 Orientation to Healthcare with a “B” or higher.
- Have completed RAD 105 with a “B” or higher.
- Have completed a clinical observation.

**Special Program Requirements:** The American Registry of Radiologic Technology requires an applicant to be of good moral character. “Generally, the conviction of either (a) felony or (b) any offense, misdemeanor, or felony involving moral turpitude indicates a lack of good moral character for registry purposes. Those who have been convicted of a crime may be eligible for registration if they have served their entire sentence, including probation and parole, and have had their civil rights restored.” For further information, contact the program director.

All incomplete grades (“I”) must be resolved prior to taking the next course in the sequence.

Prerequisites:		Credits
BIO	141 Anatomy and Physiology I	4
BIO	142 Anatomy and Physiology II	4
ENG	111 College Composition I	3
RAD	105 Intro. to Radiology, Protection, and Patient Care	2
SDV	101 Orientation to Healthcare	1
<b>Total</b>		<b>14</b>

Two Years		Credits
1st Semester		
HLT	141 Introduction to Medical Terminology	1
RAD	121 Radiographic Procedures I	4
RAD	125 Patient Care Procedures	3
RAD	141 Principles of Radiation Quality I	4
RAD	196 On-Site Training	2
<b>Total</b>		<b>14</b>

2nd Semester		
RAD	131 Elementary Clinical Procedures I	3
RAD	142 Principles of Radiation Quality II	4
RAD	221 Radiographic Procedures II	4
<sup>1</sup> —	Social Science Elective	3
<b>Total</b>		<b>14</b>

3rd Semester		
<sup>2</sup> RAD	135 Elementary Clinical Procedures II	5
<b>Total</b>		<b>5</b>

4th Semester		
RAD	205 Radiation Protection and Radiobiology	3
RAD	231 Advanced Clinical Procedures I	5
RAD	255 Radiographic Equipment	3
<b>Total</b>		<b>11</b>

5th Semester		
<sup>3</sup> —	Humanities/Fine Arts Elective	3
RAD	232 Advanced Clinical Procedures II	5
RAD	240 Radiographic Pathology	3
RAD	246 Special Procedures	1
<b>Total</b>		<b>12</b>

**Total credits for the A.A.S. Degree in Radiography = 70 (includes 14 prerequisite credits)**

- <sup>1</sup> See social/behavioral science courses listed under General Education Electives.
- <sup>2</sup> RAD 135 meets for 40 hours a week for ten weeks.
- <sup>3</sup> See humanities/fine arts courses listed under General Education Electives.

## Respiratory Therapy

Associate of Applied Science Degree

Offered through MEC

**Purpose:** The curriculum is designed to prepare students to be effective members of the healthcare team in assisting with diagnosis, treatment, management, and preventive care of patients with cardiopulmonary problems. Upon successful completion of the program, students are eligible to take the entry-level and advanced practitioner examinations leading to certification as a Certified Respiratory Therapist (CRT) and registration as a Registered Respiratory Therapist (RRT).

**Transfer Information:** Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

**Advanced Placement Admission:** Students seeking advanced placement, or transfer, including military respiratory technicians, or non-associate degree therapists should contact the program director of the RTH program for individual counseling.

**Admission Requirements:** Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- View a Respiratory Therapy information session online.
- Qualify for ENG 111 and MTH 154 through acceptable scores on NOVA's placement tests.
- Have a minimum 2.5 curricular GPA at the last school/college attended at which at least 15 credits were completed.
- Have completed ENG 111, NAS 161 (BIO 141) and NAS 162 (BIO 142), HLT 141, and SDV 101 Orientation to Healthcare or an SDV elective with a grade of "C" or higher.
- Have completed RTH 120 with a grade of "B" or higher.

**Special Accreditation Status:** NOVA's Respiratory Therapy Program at the Medical Education Campus is accredited by the Commission on Accreditation for Respiratory Care (CoARC), [www.coarc.com](http://www.coarc.com). NOVA's CoARC number is 200206.

**Continuation Requirement:** Students must comply with all continuation requirements for Allied Health and Respiratory Therapy students.

**Special Program Continuation Requirements:** If general education courses are not completed before acceptance into the Respiratory Therapy Program, then they are to be taken in the corresponding semester as indicated in the curriculum plan. Students may not proceed to the next sequential respiratory therapy course without having completed the appropriate general education coursework.

**Reenrollment:**

- Students in good standing may be permitted to reenroll in the RTH curriculum on a space-available basis, with permission of the program director.
- Students who leave the program for any period up to two years for either personal or academic reasons are required to demonstrate proficiency in all previously enrolled skills courses prior to reentering the program. "Practical exams" are administered and scheduled by the program faculty. A written exam will be required.
- Students who leave the program for any period of time for medical reasons are required to submit evidence of good physical and mental health, as substantiated by a newly completed Pre-Admission Health History and Physical for Allied Health and Nursing Form (125-007) signed by the primary physician responsible for their care.

**Licensure Requirements:** The Virginia Board of Medicine reserves the right to deny licensure to any candidate who has been convicted of a crime or any offense relating to the abuse of alcohol and/or use or sale of controlled substances in Virginia or any other state. Any applicant to the Respiratory Therapy Program who has been found guilty of a misdemeanor or felony must consult with the program director of Respiratory Therapy prior to acceptance into the program.

Prerequisites:		Credits
BIO	141 Anatomy and Physiology I or NAS 161 Health Science I	4
BIO	142 Anatomy and Physiology II or NAS 162 Health Science II	4
ENG	111 College Composition I	3
HLT	141 Medical Terminology	1
RTH	120 Fundamental Theory for Respiratory Care	2
SDV	101 Orientation to Healthcare	1
	<b>Total</b>	<b>15</b>



<b>Two Years</b>		<b>Credits</b>
<b>1st Semester</b>		
<sup>1</sup> ___	Humanities/Fine Arts Elective	3
RTH	102 Integrated Science for Respiratory Care II	3
RTH	111 Anatomy and Physiology of the Cardiopulmonary System	3
RTH	145 Pharmacology for Respiratory Care I	1
RTH	151 Fundamental Clinical Procedures	3
	<b>Total</b>	<b>13</b>
<b>2nd Semester</b>		
<sup>2</sup> CST	229 Intercultural Communication	3
RTH	121 Cardiopulmonary Science I	3
RTH	131 Respiratory Care Theory and Procedures I	4
RTH	196 On-Site Training in Respiratory Care I	3
RTH	245 Pharmacology for Respiratory Care II	2
	<b>Total</b>	<b>15</b>
<b>3rd Semester</b>		
RTH	135 Diagnostic and Therapeutic Procedures	2
RTH	296 On-Site Training in Respiratory Care II	2
	<b>Total</b>	<b>4</b>
<b>4th Semester</b>		
RTH	215 Pulmonary Rehabilitation	1
RTH	222 Cardiopulmonary Science II	3
RTH	223 Cardiopulmonary Science III	2
RTH	236 Critical Care Monitoring	3
RTH	190 Coordinated Internship	3
	<b>Total</b>	<b>12</b>
<b>5th Semester</b>		
PED	116 Lifetime Fitness and Wellness	1
RTH	225 Neonatal and Pediatric Respiratory Procedures	3
RTH	227 Integrated Respiratory Therapy Skills II	2
RTH	290 Coordinated Internship	3
<sup>3</sup> ___	Social Science Elective	3
	<b>Total</b>	<b>12</b>

**Total credits for the A.A.S. Degree in Respiratory Therapy = 71  
(includes 15 prerequisite credits)**

- <sup>1</sup> See humanities/fine arts courses listed under General Education Electives.
- <sup>2</sup> CST 229 is recommended. Students may select CST 110 or CST 126.
- <sup>3</sup> See social/behavioral science courses listed under General Education Electives.

# COURSE DESCRIPTIONS

## Course Numbers

Courses numbered 1–9 are developmental courses. The credits earned in these courses are not applicable toward a degree or a certificate.

Courses numbered 10–99 are freshman-level courses that may apply to certificate programs. The credits earned in these courses are not applicable toward an associate degree.

Courses numbered 100–299 are applicable toward associate degrees and certificate programs.

## Course Credits

The credit for each course is indicated in parentheses after the title in the course description. One credit is equivalent to one collegiate semester-hour credit.

## Course Hours

The number of lecture hours in class each week (including lecture, seminar, and discussion hours) and/or the number of laboratory hours in each week (including laboratory, shop, supervised practice, and cooperative work experiences) are indicated for each course in the course description. The number of lecture and laboratory hours in class each week is also called “contact” hours because it is time spent under the direct supervision of a faculty member. In addition to the lecture and laboratory hours in class each week, each student must spend some time on out-of-class assignments under his/her own direction. Usually each credit per course requires an average of three hours of in-class and out-of-class work each week.

## Prerequisites and Corequisites

Prerequisites required before enrolling in a course are identified in the course description. Courses in sequences (usually identified by the numerals I–II) require that the preceding course in the sequence (or equivalent) be completed before one can enroll in the next course in the sequence. Usually corequisites must be taken at the same time. The prerequisites or their equivalent must be completed satisfactorily before enrolling in a course unless special permission is obtained from the division. NOVA's *Schedule of Classes* lists additional information on special enrollment requirements.

## Frequency of Offerings

The College is not obligated to offer, nor can it offer, all courses every semester. Courses are usually offered in the semesters indicated in the degree or

certificate outline given in the “Programs of Study” chapter of this *Catalog*. NOVA's *Schedule of Classes* lists the courses being offered for the respective semester or session.

## General Usage Courses

The following general usage courses apply to multiple curricula and may carry a variety of prefix designations. The descriptions of the courses are identical for each different prefix and are as follows:

### **90–190–290 (1–5 CR.)**

#### **Coordinated Internship**

Supervised on-the-job training in selected business, industrial, or service firms coordinated by the College. Credit/work ratio maximum 1:5 hrs. May be repeated for credit. Variable hours.

### **93–193–293 (1–5 CR.)**

#### **Studies In**

Experimental courses to test their viability as permanent offerings. Each offering of the course must be approved by the academic dean. An experimental course may be offered twice, after which the course must be approved following VCCS processes for adding new courses to the Master Course File. Credit/work ratio maximum 1:5 hrs. May be repeated for credit. Variable hours.

### **95–195–295 (1–5 CR.)**

#### **Topics In**

Exploration of topical areas of interest to or needed by students. May be used also for special Honors courses. May be repeated for credit. Variable hours.

### **96–196–296 (1–5 CR.)**

#### **On-Site Training In**

Career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the College. Credit/work ratio not to exceed 1:5 hrs. May be repeated for credit. Variable hours.

### **97–197–297 (1–5 CR.)**

#### **Cooperative Education**

Supervised on-the-job training for pay in approved business and government organizations. Applicable to all curricula at the discretion of the College. See eligibility requirements under “Cooperative Education,” included with the “Academic Information and Policies” section. Credit/work ratio not to exceed 1:5 hrs. May be repeated for credit. Variable hours.

**98-198-298 (1-5 CR.)****Seminar and Project**

Completion of a project or research report related to the student's occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

**99-199-299 (1-5 CR.)****Supervised Study**

Assignment of problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

## Accounting

**ACC 115 (3 CR.)****Applied Accounting**

Presents practical accounting procedures for retail stores, professional individuals in firms, and personal service occupations. Covers the accounting cycle, journals, ledgers, preparation of financial statements and payroll, and checking account management. Lecture 3 hours per week.

**ACC 211 (3 CR.)****Principles of Accounting I**

Introduces accounting principles with respect to financial reporting. Demonstrates how decision makers use accounting information for reporting purposes. Focuses on the preparation of accounting information and its use in the operation of organizations, as well as methods of analysis and interpretation of accounting information. Must be taken in sequence with ACC 212. Lecture 3 hours per week.

**ACC 212 (3 CR.)****Principles of Accounting II**

Prerequisite: ACC 211. Introduces accounting principles with respect to cost and managerial accounting. Focuses on the application of accounting information with respect to product costing, as well as its use within the organization to provide direction and to judge performance. Lecture 3 hours per week.

**ACC 213 (1 CR.)****Principles of Accounting Laboratory I**

Corequisite: ACC 211 may be required. Provides problem solving experience to supplement instruction in ACC 211. Laboratory 2 hours per week.

**ACC 214 (1 CR.)****Principles of Accounting Laboratory II**

Corequisite: ACC 212 may be required. Provides problem-solving experience to supplement instruction in ACC 212. Laboratory 2 hours per week.

**ACC 215 (3 CR.)****Computerized Accounting**

Prerequisite: ACC 211. Introduces the computer in solving accounting problems. Focuses on operation of computers. Presents the accounting cycle and financial statement preparation in a computerized system and other applications for financial and managerial accounting. Lecture 3 hours per week.

**ACC 219 (3 CR.)****Governmental and Not-for-Profit Accounting**

Prerequisite: ACC 212 or equivalent. Introduces fund accounting as used by governmental and nonprofit entities. Stresses differences between accounting principles of for-profit and not-for-profit organizations. Lecture 3 hours per week.

**ACC 220 (3 CR.)****Accounting for Small Business**

Presents practical accounting procedures for small business operations including service occupations, retail stores, and manufacturing operations. Covers the accounting cycle, journals, ledgers, preparation of financial statements and payrolls, and checking account management. Includes regulations applicable to payroll, self-employment, Social Security, and other taxes. Lecture 3 hours per week.

**ACC 221 (3 CR.)****Intermediate Accounting I**

Prerequisite: ACC 212 or equivalent. Covers accounting principles and theory, including a review of the accounting cycle and accounting for current assets, current liabilities, and investments. Introduces various accounting approaches and demonstrates the effect of these approaches on the financial statement users. Must be taken in sequence with ACC 222. Lecture 3 hours per week.

**ACC 222 (3 CR.)****Intermediate Accounting II**

Prerequisite: ACC 221. Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long-term liabilities, and investments. Must be taken in sequence with ACC 221. Lecture 3 hours per week.

**ACC 230 (3 CR.)****Advanced Accounting**

Pre- or corequisite: ACC 222 or equivalent. Develops the skills necessary to prepare financial statements for complex business organizations. Includes the preparation of consolidated financial statements focusing on business combinations, multinational corporations, and foreign currency translation. Covers accounting for partnerships, state and local governments, and nonprofit organizations. Lecture 3 hours per week.

**ACC 231 (3 CR.)****Cost Accounting I**

Prerequisite: ACC 212 or equivalent. Studies cost accounting methods and reporting as applied to job order, process, and standard cost accounting systems. Includes cost control and other topics. Must be taken in sequence with ACC 232. Lecture 3 hours per week.

**ACC 232 (3 CR.)****Cost Accounting II**

Prerequisite: ACC 231 or equivalent. Studies profit analysis and other topics. Must be taken in sequence with ACC 231. Lecture 3 hours per week.

**ACC 240 (3 CR.)****Fraud Examination**

Covers the principles and methodology of fraud detection and deterrence. Provides an introduction to the various ways fraud and occupational abuses occur, methods to identify the risk of exposure to loss from fraud, and appropriate prevention, detection, and investigation approaches. Lecture 3 hours per week.

**ACC 241 (3 CR.)****Auditing I**

Pre- or corequisite: ACC 222 or equivalent. Presents techniques of investigating, interpreting, and appraising accounting records and assertions. Studies internal control design and evaluation, evidence-gathering techniques, and other topics. Lecture 3 hours per week.

**ACC 261 (3 CR.)****Principles of Federal Taxation I**

Presents the study of federal taxation as it relates to individuals and related entities. Includes tax planning, compliance, and reporting. Lecture 3 hours per week.

**ACC 262 (3 CR.)****Principles of Federal Taxation II**

Presents the study of federal taxation as it relates to partnerships, corporations, and other tax entities. Includes tax planning, compliance, and reporting. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Description" section.

## Acquisitions

See Contracting (CON).

## Administration of Justice

**ADJ 100 (3 CR.)****Survey of Criminal Justice**

Presents an overview of the United States criminal justice system; introduces the major system components: law enforcement, judiciary, and corrections. Lecture 3 hours per week.

**ADJ 105 (3 CR.)****The Juvenile Justice System**

Presents the evolution, philosophy, structures, and processes of the American juvenile delinquency system; surveys the rights of juveniles, dispositional alternatives, rehabilitation methods, and current trends. Lecture 3 hours per week.

**ADJ 107 (3 CR.)****Survey of Criminology**

Surveys the volume and scope of crime; considers a variety of theories developed to explain the causation of crime and criminality. Lecture 3 hours per week.

**ADJ 110 (3 CR.)****Introduction to Law Enforcement**

Studies the philosophy and history of law enforcement, presenting an overview of the crime problem and policy response issues. Surveys the jurisdictions of local, state, and federal law enforcement agencies. Examines the qualification requirements and career opportunities in the law enforcement profession. Lecture 3 hours per week.

**ADJ 111-112 (3 CR.) (3 CR.)****Law Enforcement Organization and Administration I-II**

Prerequisite for ADJ 112: division approval or ADJ 111. Teaches the principles of organization and administration of law enforcement agencies. Studies the management of line operations, staff and auxiliary services, investigative and juvenile units. Introduces the concept of data processing; examines policies, procedures, rules, and regulations pertaining to crime prevention. Surveys concepts of protection of life and property, detection of offenses, and apprehension of offenders. Lecture 3 hours per week.

**ADJ 116 (3 CR.)****Special Enforcement Topics**

Considers contemporary issues, problems, and controversies in modern law enforcement. Lecture 3 hours per week.

**ADJ 118 (3 CR.)****Crisis Intervention and Critical Issues**

Addresses basic problems involved in crisis intervention and current critical issues in law enforcement and the administration of justice;

emphasizes practical approaches to discover and implement solutions. Lecture 3 hours per week.

**ADJ 127 (3 CR.)  
Firearms and Marksmanship**

Prerequisite: permission of instructor. Surveys lethal weapons in current use and current views on weapon types and ammunition design. Examines the legal guidelines as to use of deadly force, safety in handling of weaponry, and weapon care and cleaning; marksmanship instruction under standard range conditions. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ADJ 133 (3 CR.)  
Ethics and the Criminal Justice Professional**

Examines ethical dilemmas pertaining to the criminal justice system, including those in policing, courts, and corrections. Focuses on some of the specific ethical choices that must be made by the criminal justice professional. Lecture 3 hours per week.

**ADJ 139 (4 CR.)  
Private Detectives/Investigators**

Instructs the student in investigative techniques, criminal law and procedure, rules of evidence, and the techniques and mechanics of arrest. Meets state certification requirements for private investigators licensing. Lecture 4 hours per week.

**ADJ 140 (3 CR.)  
Introduction to Corrections**

Focuses on societal responses to the offender. Traces the evolution of practices based on philosophies of retribution, deterrence, and rehabilitation. Reviews contemporary correctional activities and their relationships to other aspects of the criminal justice system. Lecture 3 hours per week.

**ADJ 150 (3 CR.)  
Introduction to Security Administration**

Introduces the student to the field of private security: its history, structures, functions, and personnel; surveys the principles and practices of security administration. Lecture 3 hours per week.

**ADJ 154 (3 CR.)  
Intelligence and Technology Analysis**

It is recommended that students have successfully completed or tested at ENG 111 level and have basic computer literacy skills. Introduces students to operational knowledge of intelligence gathering and analysis, including those through technology and pertinent to homeland security. Outlines basic intelligence policies and functions of the U.S. government and articulates the meaning and purpose of the Intelligence Reform and Terrorism Prevention Act of 2004. Evaluates dependability and reliability of source

(including technology) information. Identifies methods and/or techniques for obtaining intelligence and its analysis and discusses various intelligence gathering techniques and threats to national and international safety and security. Lecture 3 hours per week.

**ADJ 157 (3 CR.)  
Computer Security**

Examines security concerns with access controls, shutdown alternatives, hardware and software protection, and data encryption. Lecture 3 hours per week.

**ADJ 159 (3 CR.)  
Physical Security**

Studies the various forms of perimeter barriers which impact upon security operations; examines insurance considerations, underwriters licensing certification, fire prevention and fire code regulations, and the general health and safety requirements for all employees and contact persons within the organization. Lecture 3 hours per week.

**ADJ 160 (3 CR.)  
Police Response to Critical Incidents**

The course introduces incident command and emerging trends. It addresses short- and long-term situations involving bomb threats, hostage and barricade situations, attacks on government and commercial buildings, hazardous materials threats, domestic violence, and active shooter incidents. General discussions are held concerning crime scene evidence collection, agency response coordination, and working with the media during high visibility situations. Lecture 3 hours per week.

**ADJ 161 (3 CR.)  
Introduction to Computer Crime**

Provides a basic introduction to the nature of computer crimes, computer criminals, relevant law, investigative techniques, and emerging trends. Lecture 3 hours per week.

**ADJ 163 (3 CR.)  
Crime Analysis and Intelligence**

Provides a basic introduction to crime analysis and criminal intelligence. Covers the need, structure, and function within the law enforcement agency, relevant law, and future trends. Lecture 3 hours per week.

**ADJ 164 (3 CR.)  
Case Studies in Murder/Violent Crime**

Introduces the student to the investigation of murder and other violent crimes by means of classic case studies and, to the extent feasible, local case files. Includes methodology, strategy and tactics, analysis, relevant law, and future trends. Covers evidentiary techniques and technologies with a primary focus



on how critical thinking is applied to serious violent crime. Lecture 3 hours per week.

**ADJ 165 (1 CR.)  
Crime Scene Photography**

Introduces the selection and use of visual recording devices and their application to crime scene, interview, interrogation, and criminal investigation activities. Lecture 1 hour per week.

**ADJ 169 (3 CR.)  
Transportation and Border Security**

Discusses substantive issues regarding transportation security within the role of homeland security measures implemented by the United States. Introduces the student to and examines global preparedness from a transportation perspective. Considers the interrelationship among natural disasters and sustainable infrastructure. Describes intermodal and integrated transportation and physical models of movement and discusses mobility as a cultural lifeline. Lecture 3 hours per week.

**ADJ 171–172 (4 CR.) (4 CR.)  
Forensic Science I–II**

Introduces student to crime scene technology, procedures for sketching, diagramming, and using casting materials. Surveys the concepts of forensic chemistry, fingerprint classification/identification and latent techniques, drug identification, hair and fiber evidence, death investigation techniques, thin-layer chromatographic methods, and arson materials examination. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ADJ 173–174 (3 CR.) (3 CR.)  
Forensic Photography I–II**

Surveys fundamental photographic skills—exposure, composition, film, filters, darkroom materials, and procedures. Emphasizes use of photography for law enforcement purposes and for courtroom presentation. Considers current status and trends in photographic law. Lecture 3 hours per week.

**ADJ 175 (4 CR.)  
Forensic Instrumental Analysis**

Examines instrumental methods of analyzing physical evidence. Teaches the theoretical and practical applications of ultra-violet, visible, and infrared spectrophotometry, gas chromatography, thin-layer chromatography, electrophoresis, trace metals detection, X-ray, and atomic absorption analyses. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ADJ 176 (1 CR.)  
Forensic Serology**

Teaches specific techniques used in the forensic examination of body fluids. Surveys blood grouping, blood typing, characterization of blood stains, and absorption elution techniques. Examines the practical applications of blood typing systems using A-B-O, M-N, rhesus, adenylate kinase isoenzymes and phosphoglucomutase, erythrocyte acid phosphatase. Lecture 1 hour per week.

**ADJ 186 (3 CR.)  
Forensic Psychology**

Introduces student to the constructs of criminal psychology. Introduces the student to the exploration of criminal investigative analysis, VI-CAP, mental disorders, and the etiology of certain criminal behaviors. Lecture 3 hours per week.

**ADJ 211–212 (3 CR.) (3 CR.)  
Criminal Law, Evidence, and Procedures I–II**

Teaches the elements of proof for major and common crimes and the legal classification of offenses. Studies the kinds, degrees, and admissibility of evidence and its presentation in criminal proceedings with emphasis on legal guidelines for methods and techniques of evidence acquisition. Surveys the procedural requirements from arrest to final deposition in the various American court systems with focus on the Virginia jurisdiction. Lecture 3 hours per week.

**ADJ 216 (3 CR.)  
Organized Crime and Corruption**

Addresses judicial efforts against and involvement in corruption, drug, vice, and white-collar crimes, both individual and organized. Lecture 3 hours per week.

**ADJ 227 (3 CR.)  
Constitutional Law for Justice Personnel**

Surveys the basic guarantees of liberty described in the U.S. Constitution and the historical development of these restrictions on government power, primarily through U.S. Supreme Court decisions. Reviews rights of free speech, press, assembly, as well as criminal procedure guarantees (to counsel, jury trial, habeas corpus, etc.) as they apply to the activities of those in the criminal justice system. Lecture 3 hours per week.

**ADJ 228 (3 CR.)  
Narcotics and Dangerous Drugs**

Surveys the historical and current usage of narcotics and dangerous drugs. Teaches the identification and classification of such drugs and emphasizes the symptoms and effects on their users. Examines investigative methods and procedures utilized in law

enforcement efforts against illicit drug usage. Lecture 3 hours per week.

**ADJ 232 (3 CR.)  
Domestic Violence**

Addresses domestic violence as a form of interpersonal violence within our country directed at spouses, domestic partners, children, and the elderly. Lecture 3 hours per week.

**ADJ 234 (3 CR.)  
Terrorism and Counter-Terrorism**

Prerequisites: ADJ 100 and ADJ 107. Surveys the historical and current practices of terrorism that are national, transnational, or domestic in origin. Includes biological, chemical, nuclear, and cyber-terrorism. Teaches the identification and classification of terrorist organizations, violent political groups, and issue-oriented militant movements. Examines investigative methods and procedures utilized in counter-terrorist efforts domestically and internationally. Lecture 3 hours per week.

**ADJ 236 (3 CR.)  
Principles of Criminal Investigation**

Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene search, collecting, handling, and preserving of evidence. Lecture 3 hours per week.

**ADJ 237 (3 CR.)  
Advanced Criminal Investigation**

Prerequisite: ADJ 236 or division approval. Introduces specialized tools and scientific aids used in criminal investigation. Applies investigative techniques to specific situations and preparation of trial evidence. Lecture 3 hours per week.

**ADJ 240 (3 CR.)  
Techniques of Interviewing**

Provides the student with essential skills and techniques necessary to obtain quality information from victims, witnesses, and suspects, regarding criminal activity. Emphasizes locations and settings for interviews, kinesics, proxemics, and paralinguistics of both the interviewer and interviewee. Lecture 3 hours per week.

**ADJ 243 (3 CR.)  
Homeland Security and Law**

Prerequisite: ADJ 111 or division approval. Covers relationships abroad, the mission of federal, state, and local government at home, and the best way to provide for the common defense. Examines HLS and emergency management; FEMA's place in public policy, law, and management; HLS initiatives and new partnerships for HLS covering the government, private sector, and higher education. Discusses civil

rights issues; the U.S.A. Patriot Act; future challenges and roles of intelligence agencies; and foreign policy aspects and views. Lecture 3 hours per week.

**ADJ 244 (3 CR.)  
Terrorism Response Planning**

Builds an understanding of terrorism and the past, present, and future national and international responses to terrorism and the defense against it. Teaches the knowledge and skills necessary to assist state and local emergency managers in planning for and managing a response to a terrorist incident. Lecture 3 hours per week.

**ADJ 247 (3 CR.)  
Criminal Behavior**

Introduces and evaluates the concepts of normal and abnormal behavior. Focuses on the psychological and sociological aspects of criminal and other deviant behavior patterns. Lecture 3 hours per week.

**ADJ 248 (3 CR.)  
Probation, Parole, and Treatment**

Surveys the philosophy, history, organization, personnel, and functioning of traditional and innovative probation and parole programs; considers major treatment models for clients. Lecture 3 hours per week.

**ADJ 250 (3 CR.)  
Global Security Concepts for Law Enforcement and National Security**

Identifies and examines the interrelationship of significant global issues and events that affect local and national crime and security interests of the United States. Emphasizes the economic dimensions of international events and the transnational ripple effect they have on the security and well-being of others residing in distant localities and lands. Explores issues of cooperation and coordination of investigative and prosecutive activities in a global environment. Lecture 3 hours per week.

**ADJ 252 (3 CR.)  
Counterintelligence Concepts for Law Enforcement and National Security**

Studies the role national security agencies and law enforcement play in counterintelligence programs to identify and thwart hostile criminal activities against United States citizens, businesses, corporations, and U.S. national interests by foreign governments, organizations, and individuals. Focuses on the role of ethical and moral counterintelligence activities and investigations in a democratic society. Lecture 3 hours per week.

**ADJ 255 (3 CR.)  
Security Management**

Examines the major management operations of planning, organizing, staffing, directing, and controlling the private security unit. Reviews the functions of management, implementation of institutional programs, and development of staff. Lecture 3 hours per week.

**ADJ 257 (3 CR.)  
Loss Prevention**

Studies internal and external theft that affects all private and public operations, with focus on retail businesses. Examines and evaluates major loss prevention programs used by security operations, again with focus on retail security. Lecture 3 hours per week.

**ADJ 275 (3 CR.)  
Forensic Pathology**

Introduces the pathology and physiology of the human body with emphasis on scientific name and technique used in medicolegal investigations of death. Studies types of death, the mechanisms of death and death reflex, and the determining of the cause of death by postmortem examination. Lecture 3 hours per week.

**ADJ 278 (3 CR.)  
Firearms and Tool-Mark Identification**

Introduces the role of the firearms examiner in forensic science. Teaches the examination techniques and procedures for identifying firearms, tool-marks, ammunition, projectiles, and projectile fragments. Instructs on the topics of determining muzzle-to-target distance; gunshot residue tests; firearms nomenclature; comparative micrography; serial number restoration; and the collecting, handling, and presenting of firearms and tool-mark evidence. Lecture 3 hours per week.

**ADJ 289 (3 CR.)  
Comparative Systems of Criminal Justice**

Surveys administration of justice in a variety of nations, comparing workings and results of different law enforcement, judicial, and correctional components. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Air Conditioning and Refrigeration

**AIR 111 (3 CR.)  
Air Conditioning and Refrigeration Controls I**

Prerequisite or corequisite: SDV 100 or SDV 106. Presents electron theory, magnetism, Ohm's Law, resistance, current flow, instruments for electrical

measurement, A.C. motors, power distribution controls, and their application. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**AIR 121-122 (4 CR.) (4 CR.)  
Air Conditioning and Refrigeration I-II**

Prerequisite for AIR 122: AIR 121. Prerequisite or corequisite for AIR 121: SDV 100 or SDV 106. Studies refrigeration theory, characteristics of refrigerants, temperature and pressure, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, and metering devices. Presents charging and evaluation of systems and leak detection. Explores servicing the basic system. Explains use and care of oils and additives and troubleshooting of small commercial systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AIR 134 (3 CR.)  
Circuits and Controls I**

Prerequisite: AIR 111. Presents circuit diagrams for air conditioning units, reading and drawing of circuit diagrams, types of electrical controls, and house wiring circuits. Includes analysis of air conditioning circuits, components, analysis and characteristics of circuits and controls, testing, and servicing. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**AIR 154 (4 CR.)  
Heating Systems I**

Prerequisite: AIR 111. Introduces types of fuels and their characteristics of combustion; types, components, and characteristics of burners and burner efficiency analyzers. Studies forced air heating systems including troubleshooting, preventive maintenance, and servicing. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AIR 205 (4 CR.)  
Hydronics and Zoning**

Prerequisite: AIR 154. Presents installation, servicing, troubleshooting, and repair of hydronic systems for heating and cooling. Includes hot water and chilled water systems using forced circulation as the transfer medium. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**AIR 207 (4 CR.)  
Heat Loads and Psychrometrics**

Prerequisite: AIR 121. Studies air and its properties, characteristics, and measurements as applied to human comfort. Considers control of temperature, humidity, and distribution of air and air mixtures. Studies heat loss and heat gain factors. Considers the effect, the selection, and layout of residential air conditioning and refrigeration systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AIR 213 (4 CR.)****Air Conditioning and Refrigeration Controls III**

Prerequisite: AIR 134. Introduces electrical, pneumatic, and electronic control circuits as applied to year-round air conditioning systems. Includes reading wiring and schematic diagrams, troubleshooting, and designing high and low voltage control systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AIR 235 (4 CR.)****Heat Pumps**

Prerequisites: AIR 122 and AIR 134. Studies theory and operation of reverse cycle refrigeration including supplementary heat as applied to heat pump systems, including service, installation, and maintenance. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AIR 238 (4 CR.)****Advanced Troubleshooting and Service**

Prerequisite: AIR 251. Presents advanced service techniques on a wide variety of equipment used in refrigeration, air conditioning, and phases of heating and ventilation and controls. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

**AIR 251 (4 CR.)****Air Conditioning Systems I**

Prerequisites: AIR 134 and AIR 122. Studies equipment used in air component sizing, selection, and application; servicing and repairing of coils and compressors. Includes troubleshooting the cooling system. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AIR 252 (4 CR.)****Air Conditioning Systems II**

Prerequisite: AIR 251. Studies piping design and sizing, installation, condensers, and water towers. Includes valves, strainers, and accessories; duct systems and air distribution design and their relationship with volume, static pressure, and velocity. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AIR 257 (4 CR.)****Gas-Fired Warm Air Furnaces**

Prerequisite: AIR 154. Covers the study of mid- and high-efficiency gas-fired warm air furnaces and their components. Includes equipment components, installation, servicing, and maintenance. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Description" section.

**American Sign Language**

Additional sign language courses are listed under Interpreter Education (INT).

**ASL 100 (2 CR.)****Orientation to Acquisition of ASL as an Adult**

Presents a brief introduction to the U.S. Deaf community, focusing on the differences in language and literature. Introduces many common pitfalls experienced by adults when acquiring ASL as a second language. Provides students with an experience bridging spoken English and ASL via use of visual-gestural, nonverbal communication. Lecture 2 hours per week.

**ASL 101-102 (4 CR.) (4 CR.)****American Sign Language I-II**

Introduces the fundamentals of American Sign Language (ASL) used by the Deaf community, including basic vocabulary, syntax, fingerspelling, and grammatical nonmanual signals. Focuses on communicative competence. Develops gestural skills as a foundation for ASL enhancement. Introduces cultural knowledge and increases understanding of the Deaf community. Lecture 4 hours per week.

**ASL 115 (2 CR.)****Fingerspelling and Number Use in ASL**

Prerequisite: ASL 101 or permission of instructor. Provides intensive practice in comprehension and production of fingerspelled words and numbers with emphasis on clarity and accuracy. Focuses on lexicalized fingerspelling and numeral incorporation as used by native users of American Sign Language. Lecture 2 hours per week.

**ASL 125 (3 CR.)****History and Culture of the Deaf Community I**

Presents an overview of various aspects of Deaf culture, including educational and legal issues. Examines the history of the Deaf community. Lecture 3 hours per week.

**ASL 150 (2 CR.)****Working with Deaf and Hard-of-Hearing People**

Explores career options for serving Deaf/hard-of-hearing people and/or for using American Sign Language skills in a career. Examines interests, skills, and educational assessments. Investigates job market viability via the Internet and professional periodicals. Develops opportunities for students to network with professionals in the field of deafness. Lecture 2 hours per week.

**ASL 201–202 (4 CR.) (4 CR.)  
American Sign Language III–IV**

Prerequisite: ASL 102 or permission of instructor. ASL 201 is the prerequisite for ASL 202. Develops vocabulary, conversational competence, and grammatical knowledge with a total immersion approach. Introduces increasingly complex grammatical aspects including those unique to ASL. Discusses culture and literature. Contact with the Deaf community is encouraged to enhance linguistic and cultural knowledge. Lecture 4 hours per week.

**ASL 208 (3 CR.)  
ASL for Classroom Settings**

Prerequisite: ASL 262. Provides extensive instruction of vocabulary and concepts used in content areas covered in elementary and high school classrooms. Focuses on comprehension and production of content-related information in American Sign Language with emphasis on sign production clarity and conceptual accuracy. Lecture 3 hours per week.

**ASL 210 (3 CR.)  
ASL Storytelling**

Prerequisite: ASL 262. Focuses on the elements of storytelling in ASL and the techniques that Deaf Americans utilize to pass on the histories and traditions of the Deaf community. Emphasizes comprehension and production of short stories in American Sign Language with emphasis on sign production clarity and conceptual accuracy. Lecture 3 hours per week.

**ASL 212 (2 CR.)  
Advanced Fingerspelling and Number Use**

Prerequisite: ASL 201 or permission of the instructor. Provides intensive practice in advanced comprehension and production of fingerspelled words and numbers with emphasis on clarity and accuracy. Focuses on lexicalized fingerspelling and numeral incorporation as used by native users of American Sign Language. Lecture 2 hours per week.

**ASL 220 (3 CR.)  
Comparative Linguistics: ASL and English**

Prerequisite: ASL 102. Describes spoken English and ASL (American Sign Language) on five levels: phonological, morphological, lexical, syntactic, and discourse. Compares and contrasts the two languages on all five levels using real-world examples. Documents similarities between signed languages and spoken languages in general. Describes the major linguistic components and processes of English and ASL. Introduces basic theories regarding ASL structure. Emphasizes ASL's status as a natural language by comparing and contrasting similarities and unique differences between the two languages. Lecture 3 hours per week.

**ASL 225 (3 CR.)  
Literature of the U.S. Deaf Community**

Prerequisites: ASL 125, ASL 202, and ASL 220 or equivalent. Presents an overview of various aspects of literature common in the U.S. Deaf community, including those forms written in English and those forms signed in ASL. Applies the recurring themes and metaphors in the context of the history of the U.S. Deaf community. Lecture 3 hours per week.

**ASL 261–262 (3 CR.) (3 CR.)  
American Sign Language V–VI**

Prerequisite: ASL 202. ASL 261 is the prerequisite for ASL 262. Develops advanced American Sign Language comprehension and production skills. Emphasizes advanced linguistic aspects of ASL. Presents ASL literary forms. Encourages contact with the Deaf community. Lecture 3 hours per week.

## Anthropology

See Sociology (SOC).

## Arabic

**ARA 101–102 (5 CR.) (5 CR.)  
Beginning Arabic I–II**

Prerequisite for ARA 102: ARA 101. Introduces understanding, speaking, reading, and writing skills and emphasizes basic Arabic sentence structure. Discusses the diversity of cultures in the Arab world. Lecture 5 hours per week.

**ARA 103–104 (3 CR.) (3 CR.)  
Basic Spoken Arabic I–II**

Prerequisite for ARA 104: ARA 103. Teaches oral communication, and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

**ARA 201–202 (4 CR.) (4 CR.)  
Intermediate Arabic I–II**

Prerequisite: ARA 102. Prerequisite for ARA 202: ARA 201. Continues to develop understanding, speaking, reading, and writing skills and emphasizes basic Arabic sentence structure. Discusses the diversity of cultures in the Arab world. Classes conducted in Arabic. Lecture 4 hours per week.



Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Architecture

### **ARC 123 (3 CR.)**

#### **Architectural Graphics I**

Introduces techniques of architectural communication including orthographic projection and sketching as well as 3D views and modeling. Requires the manual production of plans, sections, elevations, and 3D views and models of a simple building. Includes dimensioning and detailing. Part I of II. (Credit cannot be awarded for both ARC 121 and 123.) Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **ARC 124 (3 CR.)**

#### **Architectural Graphics II**

Prerequisites: ARC 121 or ARC 123, DRF 201, and ARC 133. A continuation of Architectural Graphics I. Introduces techniques of architectural communication including orthographic projection and sketching as well as 3D views and modeling. Requires the production of plans, sections, elevations, and 3D views and models of a simple building using computer technology. Includes dimensioning and detailing. Part II of II. (Credit cannot be awarded for both ARC 122 and 124.) Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **ARC 133 (3 CR.)**

#### **Construction Methodology and Procedures I**

Studies materials used in construction of buildings, covering foundations to structural framing systems. Includes appropriate use of materials for various construction types. Lecture 3 hours per week.

### **ARC 134 (3 CR.)**

#### **Construction Methodology and Procedures II**

Studies materials and systems for building construction. Includes specification of materials and installation procedures; types of specifications and writing procedures; bidding procedures; and contract documents. Lecture 3 hours per week.

### **ARC 138 (3 CR.)**

#### **Structures for Architects**

Prerequisite: ARC 133. Analyzes the various forces acting on a building and surveys the structural elements used to resist them. Uses case studies of ordinary and unusual structures to illustrate concepts of structural design. Provides a conceptual overview of structural systems for students interested in the design and construction of buildings. Requires some elementary algebra. Includes exercises in reading structural drawings and tables. Lecture 3 hours per week.

### **ARC 200 (4 CR.)**

#### **History of Architecture**

Surveys architecture from ancient times to the 19th century with emphasis on philosophy of design, form, and structure. Lecture 4 hours per week.

### **ARC 216 (3 CR.)**

#### **Manual Architectural Rendering and Presentation**

Prerequisite: ARC 121 or equivalent. Presents techniques of rendering and principles of art as related to architectural presentation. Covers architectural lettering and layout, freehand sketching, and perspective drawing in various media, including pencil, ink, and tempera. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **ARC 220 (3 CR.)**

#### **Introduction to Landscape Architecture and Site Planning**

Introduces the basics of landscape design and development concepts through architectural construction and plantings. Shows relationship between design and environment, including objectives of design elements and materials, facilities. Lecture 3 hours per week.

### **ARC 225 (3 CR.)**

#### **Site Planning and Technology**

Corequisite: ARC 121 or equivalent. Studies the impact of building codes and zoning ordinances on site design; storm drainage, grading design, erosion, and flood control; site materials for paving and retaining walls; and site utilities. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **ARC 231 (4 CR.)**

#### **Architectural Design and Graphics I**

Prerequisite: ARC 122 or ARC 124 or permission of instructor. Familiarizes students with a range of criteria and intentions in architectural design including the role of building systems. Helps students develop their design presentation graphics, design development, and modeling skills used in a professional architectural office. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

### **ARC 232 (4 CR.)**

#### **Architectural Design and Graphics II**

Prerequisite: ARC 231. Serves as a capstone course which requires the development of a comprehensive set of architectural communications for a complex building. Requires students to demonstrate competence in all aspects of architectural technology including site planning, building systems, construction documents, design principles, and computer aided graphics. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

**ARC 240 (3 CR.)  
Designing Sustainable Built Environments**

Prerequisites: ARC 123 and ARC 133. Introduces students to ethics, ideas, technologies, methods, and current practices in designing sustainable environments. Lecture 3 hours per week.

**ARC 243 (4 CR.)  
Environmental Systems**

Studies energy sources and strategies for use in buildings; heat loss and heat gain; heating and cooling equipment and system; water supply, distribution, and waste systems and equipment; and principles of electricity, electrical systems, and equipment. Lecture 4 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Arts**

**ART 100 (3 CR.)  
Art Appreciation**

Introduces art from prehistoric times to the present day. Describes architectural styles, sculpture, photography, printmaking, and painting techniques. Lecture 3 hours per week.

**ART 101-102 (3 CR.) (3 CR.)  
History and Appreciation of Art I-II**

Presents the history and interpretation of architecture, sculpture, and painting. Begins with prehistoric art and follows the development of Western civilization to the present. Lecture 3 hours per week.

**ART 103 (3 CR.)  
History of Far Eastern Art I**

Surveys the history of Far Eastern art from the prehistoric period to the present. Part I focuses on the art of India and Southeast Asia. Part II focuses on the art of China, Japan, and Korea. Emphasizes architecture, painting, and sculpture with some instruction in printmaking and decorative arts. Lecture 3 hours per week.

**ART 105 (3 CR.)  
Art in World Culture**

Approaches the visual arts conceptually rather than historically. Develops a nontechnical understanding of spatial arts such as architecture and industrial design. Includes painting, sculpture, and graphics. Lecture 3 hours per week.

**ART 106 (3 CR.)  
History of Modern Art**

Surveys the history of modern architecture, sculpture, painting, and graphic arts in representational and nonrepresentational forms. Focuses on the periods and movements that influenced the arts of the twentieth century. Emphasizes contemporary art forms, particularly the interaction between art and society, industry, and design. Lecture 3 hours per week.

**ART 115 (1 CR.)  
Current Issues in Web Design**

Explores contemporary subjects and current trends pertaining to web design. Emphasizes the roles of design and production techniques fundamental to web development. Lecture 1 hour per week.

**ART 116 (3 CR.)  
Design for the Web I**

Introduces the basic elements of web page design: typography, imagery, and color; and examines how they are combined to create effective layouts. Teaches organization of materials, sketching and concept development, site planning, and various methods of construction. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 117 (3 CR.)  
Design for the Web II**

Prerequisite: ART 116. Continues to study design concepts introduced in ART 116; concentrates on the addition of animation, sound, and interactivity to the web page. Explores advanced design problems. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 121-122 (3 CR.) (3 CR.)  
Drawing I-II**

Develops basic drawing skills and understanding of visual language through studio instruction/lecture. Introduces concepts such as proportion, space, perspective, tone, and composition as applied to still life, landscape, and the figure. Uses drawing media such as pencil, charcoal, ink wash, and color medium. Includes field trips and gallery assignments as appropriate. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 130 (3 CR.)  
Introduction to Multimedia**

Introduces the student to the basic components of multimedia: text, graphics, animation, sound, and video, and explores how they combine to create a multimedia product. Emphasizes the design aspects of multimedia projects and teaches the techniques required to develop a presentation. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 131–132 (3 CR.) (3 CR.)****Fundamentals of Design I–II**

Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 134 (4 CR.)****Three Dimensional Design**

Prerequisite: ART 131. Explores the concepts of three dimensional design applicable to all fields of visual art. Covers tools and techniques. Uses computers as appropriate for research. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

**ART 135 (3 CR.)****Visual Communications**

Prerequisite or corequisite: ART 131. Studies intermediate design concepts applicable to all fields of communication arts. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 140 (3 CR.)****Introduction to Graphic Skills**

Teaches basic studio skills and concepts. Emphasizes concept development and problem solving using traditional art materials and computer techniques. Uses current graphic software applications. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 141 (3 CR.)****Typography I**

Prerequisite: ART 140 or division approval. Studies the history of letterforms and typefaces and examines their uses in contemporary communications media. Emphasizes applications to specific design problems. Includes identification and specification of type and uses current technologies for copy-fitting and hands-on typesetting problems. Part I of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 142 (3 CR.)****Typography II**

Prerequisite: ART 140 and ART 141 or division approval. Examines advanced applications of the studies completed in Typography I. Explores the use of typography in layout and design. Requires projects based on professional-level problems designed to test the student's practical knowledge as well as his or her creative ability. Applies computer techniques for working with type. Part II of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 150 (3 CR.)****History of Film and Animation**

Exposes the student to the rich history of temporal imagery from the invention of the zoetrope and kinoscope through the rise of the moving picture industry and the development of the first animated films to present-day television. Chronicles the impact of the moving image in the twentieth century. Discusses the design and concept of influential works as well as the relationship between these earlier forms of moving graphics and today's innovative video technology. Lecture 3 hours per week.

**ART 153–154 (3 CR.) (3 CR.)****Ceramics I–II**

Presents problems in the design and production of functional and nonfunctional ceramic works. Includes hand-building and the use of the potter's wheel, clays, and glazes. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 160 (3 CR.)****Film Production I**

Introduces students to the basic techniques and procedures involved in motion picture production. Emphasizes aspects of filmmaking from scripting and preproduction through editing and postproduction. Includes the exploration of professional film crew roles in grip, lighting, production management, directing, sound, and editing. Part I of II. This course is equivalent to PHT 150. Credit will not be awarded for both. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ART 161 (3 CR.)****Film Production II**

Reinforces techniques covered in Film Production I emphasizing technical and theoretical aspects of the filmmaking process. Requires student collaboration on film assignments from scripting and preproduction through editing and postproduction, and roles in grip, lighting, production management, directing, sound, and editing. Part II of II. This course is equivalent to PHT 151. Credit will not be awarded for both. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ART 175 (4 CR.)****Photography Workshop**

Introduces basic camera operations and darkroom techniques. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

**ART 200 (3 CR.)****Introduction to Primitive Art**

Surveys the visual arts and crafts of prehistoric and early cultures. Includes primitive civilizations in Africa, the Americas, Oceania, and Australia. Lecture 3 hours per week.

**ART 203 (3 CR.)  
Animation I**

Prerequisite: ART 121. Introduces the student to the basic techniques of animation, combining traditional and computer-generated skills. Teaches theoretical elements of the aesthetics of sequential imagery. Provides practical experience in two-dimensional and/or three-dimensional animation. Exposes students to a variety of animation techniques through lectures, presentations, classroom work, and outside assignments. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 204 (3 CR.)  
Animation II**

Prerequisites: ART 203, ART 207, and ART 121. Builds on the student's skills in the techniques of animation developed in ART 203. Emphasizes computer-generated, high-quality animations. Teaches the advanced techniques of two- and three-dimensional computer animation. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 207 (3 CR.)  
3D Model Rendering**

Prerequisites: ART 130 and ART 131. Provides the student with an advanced understanding of the principles of building three-dimensional objects, characters, and interior and exterior environments with current industry software. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 208 (3 CR.)  
Video Techniques**

Addresses the fundamentals of video technology and non-linear video editing. Focuses on the aesthetics of time-code editing using current industry software. Teaches student to shoot and capture video and record and edit sound; and combine artwork, animation, video, and sound in the creation of professional-quality original video projects. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 209 (3 CR.)  
Creative Concepts and Writing**

Focuses on the generation of creative verbal/visual concepts and the techniques of effective written communication necessary for success in the graphic design industry. Lecture 3 hours per week.

**ART 217 (3 CR.)  
Graphic Design I**

Prerequisites: ART 121, ART 131, ART 135, ART 140, and ART 141. Corequisites: ART 142 and ART 265. Focuses on creative concepts and skills necessary for graphic design problem solving using current technology. Includes techniques specific to computer applications for the production of print design using text and image. Part I of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 218 (3 CR.)  
Graphic Design II**

Prerequisite: ART 217. Builds on the studies completed in Graphic Design I. Teaches advanced problem-solving skills, concept development, and project management. Applies intermediate-level production techniques to 2D and 3D graphic design using current technologies and principles of pre-press production. Part II of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 220 (3 CR.)  
Advanced Design for the Web**

Prerequisites: ART 116 and ART 117 or division approval. Presents advanced features of web design and technology used by designers. Explores advanced design problems. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 221-222 (3 CR.) (3 CR.)  
Drawing III-IV**

Prerequisite for ART 221: ART 122. Prerequisite for ART 222: ART 221. Introduces advanced concepts and techniques of drawing as applied to the figure, still life, and landscape. Gives additional instruction in composition, modeling, space, and perspective. Encourages individual approaches to drawing. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 230 (3 CR.)  
Multimedia II**

Prerequisites: ART 130 and ART 131. Extends the student's knowledge base and skills concerning multimedia design. Concentrates on the development of well-designed and integrated multimedia portfolio projects. Introduces the students to advanced multimedia techniques. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 231-232 (4 CR.) (4 CR.)  
Sculpture I-II**

Prerequisite: ART 131. Introduces sculptural concepts and methods of production in traditional and contemporary media. Includes clay, plaster, wood, stone, metal, plastics, and terra cotta. May include field trips. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 235 (3 CR.)****Functional Ceramics**

Prerequisite: ART 154. Explores the design and production of functional ceramics, including handbuilding and use of the wheel. Lecture 1 hour. Studio instruction 5 hours. Total 6 hours per week.

**ART 236 (3 CR.)****Sculptural Ceramics**

Prerequisite: ART 154. Explores the design and production of sculptural ceramics, including handbuilding and use of the wheel. Lecture 1 hour. Studio instruction 5 hours. Total 6 hours per week.

**ART 237 (3 CR.)****Ceramic Decoration**

Prerequisite: ART 154. Explores ceramic decoration techniques used in functional and nonfunctional ceramics. Lecture 1 hour. Studio instruction 5 hours. Total 6 hours per week.

**ART 241–242 (3 CR.) (3 CR.)****Painting I–II**

Prerequisite: ART 122 or division approval. Introduces abstract and representational painting in acrylic and/or oil with emphasis on color, composition, and value. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 243–244 (3 CR.) (3 CR.)****Watercolor I–II**

Prerequisite: ART 131 or division approval. Presents abstract and representational painting in watercolor with emphasis on design, color, composition, technique, and value. Lecture 1 hour. Studio instruction 3 hours. Total 4 hours per week.

**ART 247 (3 CR.)****Painting Techniques for Illustrators**

Prerequisites: ART 231 and ART 232. The development of graphic design and illustration with emphasis on the nineteenth and twentieth centuries. Analyzes the work of outstanding designers and illustrators. Lecture 1 hour. Lab 4 hours. Total 5 hours per week.

**ART 250 (3 CR.)****History of Design**

Surveys the development of graphic design and illustration with emphasis on the nineteenth and twentieth centuries. Analyzes the work of outstanding designers and illustrators. Lecture 3 hours per week.

**ART 251–252 (3 CR.) (3 CR.)****Communication Design I–II**

Prerequisites: ART 131 and ART 140. Studies the principles of visual communications as applied to advertising in newspapers, magazines, direct mail advertising, house organs, etc. Analyzes the influence of contemporary art on design. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 263 (3 CR.)****Interactive Design I**

Prerequisites: ART 116, ART 121, ART 131, ART 135, ART 140, and ART 141. Focuses on creative concepts of design problem solving for interactive design. Instructs students in techniques specific to web, multimedia for the web, and other interactive design projects using current technology and standards. Interactive functionality and usability are covered. Part I of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 264 (3 CR.)****Interactive Design II**

Prerequisite: ART 263. Corequisite: ART 142. Builds on the studies completed in Interactive Design I. Focuses on conceptualization and problem solving for interactive design. Instructs students in intermediate techniques specific to web, multimedia for the web, and other interactive design projects using current technology and standards. Includes interactive documents and experiences. Part II of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 265 (3 CR.)****Graphic Techniques**

Prerequisite: ART 140. Corequisite: ART 141. Applies the study of printing processes to the preparation of design files for professional printing. Teaches printing production, terminology, image, and typography specifications, as well as technical skills using current technology and software. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 268 (3 CR.)****Professional Practices in****Communication Design**

Prerequisites: ART 135, ART 140, ART 140, ART 141, and ART 142. Corequisites: ART 217, ART 218 and/or ART 263, ART 264 or division approval. Focuses on the business practices, ethical issues, and design issues present within the professional world of communication design. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.



**ART 270 (3 CR.)  
Motion Graphics I**

Prerequisites: ART 131 and ART 140. Introduces fundamental concepts for motion graphics, including graphics and promos for television networks and film titles and logos for advertising. Focuses on design presentation and development, screen composition, graphic transitions, and content. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 271–272 (3 CR.) (3 CR.)  
Printmaking I–II**

Introduces the student to the full range of printmaking techniques. Includes woodcut, silkscreen, etching, and lithography. Provides historical perspective on printmaking. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

**ART 277 (4 CR.)  
Advanced Printmaking**

Provides additional opportunity for individual exploration in selected printmaking processes. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

**ART 278–279 (4 CR.) (4 CR.)  
3D Computer Design I–II**

Prerequisite for ART 278: ART 283. Prerequisite for ART 279: ART 278. Introduces fundamental concepts in 3D model building and animation: spline extrusion and motion, point editing, texture and mapping, ray tracing, rotoscoping, physical simulations, and forward and inverse kinematics. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

**ART 280 (3 CR.)  
Graphic Design for Studio Arts**

Prerequisites: ART 131 and PHT 101. Introduces digital tools, software, and techniques used by visual artists and design professionals to create day-to-day business forms, documents, and self-promotional material. Explores the fundamental principles of layout and design that govern the use of image, type, and color. Presents professional standards and practices used for organizing, archiving, printing, and presenting their work. Lecture 2 hours per week. Laboratory 3 hours per week. Total 5 hours per week.

**ART 281 (3 CR.)  
Illustration for Designers**

Prerequisites: ART 121, ART 131, ART 135, ART 140, or division approval. Explores the professional field of illustration, along with the different ways of producing illustrations for editorial, commercial, and technical clients using traditional and digital techniques. Build skills and knowledge through discussions, projects, and exercises for positioning as an illustrator. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 283–284 (4 CR.) (4 CR.)  
Computer Graphics I–II**

Utilizes microcomputers and software to produce computer graphics. Employs techniques learned to solve studio projects which reinforce instruction and are appropriate for portfolio use. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 287 (1–4 CR.)  
Portfolio and Resume Preparation**

Focuses on portfolio preparation, resume writing, and job interviewing for students. Recommended for final semester program students. Requires instructor's approval. Lecture 1–2 hours. Studio instruction 0–4 hours. Total 1–6 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of the "Course Descriptions" section.**

## Auto Body

**AUB 106 (4 CR.)  
Basic Sheet Metal Operations**

Teaches the use of metal straightening tools, basic straightening operations, shrinking, filling, and sheet metal damage and repair procedures. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AUB 116 (4 CR.)  
Auto Body Repair**

Teaches collision straightening procedures and use of equipment, planning repair procedures, disassembly techniques, body fastening systems, glass removal and replacement, and panel repair and alignment. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AUB 118 (4 CR.)  
Automotive Paint Preparation**

Teaches auto body preparation for painting, using the materials, processes, and equipment required to prepare metal and old finishes. Includes sanding, cleaning, solvents, special materials, fillers, and primers. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AUB 119 (4 CR.)  
Automotive Painting**

Prerequisite: AUB 118. Teaches theory and application of painting and the use of painting equipment and materials including paints, thinners, primers, rubbing compounds, and cleaners. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AUB 125 (4 CR.)****Auto Body Welding**

Presents the principles involved in using heat to relieve stress in shrinking metal, as well as the processes used in joining high and low strength steels. Includes oxyacetylene welding, cutting, brazing, and soldering, resistance spot welding, and MIG welding. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Automotive

**AUT 100 (2 CR.)****Introduction to Automotive Shop Practice**

Prerequisite or corequisite for all automotive courses. Introduces shop practices for automotive laboratory and shop safety, identification and use of hand tools, general power equipment, and maintenance of automotive shop. Explains basic operation procedures of standard shop equipment. Presents Occupational Safety and Health Act standards pertaining to the automotive field. Lecture 2 hours per week.

**AUT 111-112 (4 CR.) (4 CR.)****Automotive Engines I-II**

Prerequisite for AUT 112: AUT 111. Presents analysis of power, cylinder condition, valves, and bearings in the automotive engine to establish the present condition, repairs, or adjustments. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AUT 113 (3 CR.)****Cylinder Block Service**

Studies basic cylinder block reconditioning, including boring, resleeving, line-boring, and deck resurfacing. Includes repair techniques for damaged block and cylinder head castings to include cold welding, brazing, welding, and epoxy. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**AUT 114 (3 CR.)****Cylinder Head Service II**

Prerequisite: AUT 113. Studies cylinder head reconditioning, including valve seat grinding, refacing valves, servicing valve guides, valve seat inserts, cutting for valve seals and spring, thread repair, and resurfacing mating surfaces. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**AUT 120 (3 CR.)****Introduction to Automotive Machine Shop**

Prerequisite or corequisite for all other machinist courses. Introduces automotive machining operations emphasizing shop safety and the safe use of machine shop tools. Surveys basic machining operations and specialized auto machining techniques necessary for reconditioning engine and chassis components. Requires basic set of machinist's hand tools. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**AUT 121-122 (4 CR.) (4 CR.)****Automotive Fuel Systems I-II**

Prerequisite for AUT 122: AUT 121. Analyzes major domestic and foreign automotive fuel systems to include carburetors and fuel injection systems. Includes detailed inspection and discussion of fuel tanks, connecting lines, instruments, filters, fuel pumps, superchargers, and turbo charger. Also includes complete diagnosis, troubleshooting, overhaul, and factory adjustment procedures of all major carbureted and fuel injection systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AUT 130 (3 CR.)****Introduction to Automotive Mechanics**

Introduces auto mechanics, covering auto shop safety, tool identification and use. Explains automobile system theory and function. Stresses quality work practices and job opportunities. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**AUT 136 (2 CR.)****Automotive Vehicle Inspection**

Presents information on methods for performing automotive vehicle safety inspection. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**AUT 141-142 (4 CR.) (4 CR.)****Auto Power Trains I-II**

Presents operation, design, construction, and repair of power train components, standard and automatic transmission. Includes clutches, propeller shaft, universal joints, rear axle assemblies, fluid couplings, torque converters, as well as 2-, 3-, and 4-speed standard, overdrive and automatic transmissions. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AUT 215 (2 CR.)****Emissions Systems Diagnosis and Repair**

Prerequisite: AUT 111 or AUT 241 or program approval. Presents logical diagnostic paths to identify vehicle HC-CO, O<sub>2</sub>, and NO<sub>x</sub> failure areas. Teaches a progression of failure detection from most likely to more complex causes. Emphasizes use of infrared analyzer and manufacturer's specified adjustments. Lecture 2 hours per week.

- AUT 225 (1 CR.) Automotive Emissions Inspection**  
Provides training for certified inspectors in the Virginia State Emissions Inspection Program. Emphasizes current legislation and inspection techniques using industry standard emission analyzers. Lecture 1 hour per week.
- AUT 226 (2 CR.) Advanced ASM Emissions Diagnostics**  
Presents logical diagnostic strategies to identify and correct vehicle HC, CO, and NOx emissions failures. Specifically addresses the technologies and techniques required for successful diagnosis and repair of vehicles failing Acceleration Simulation Mode (ASM) and Two-Speed Idle Mode Tests. Current ASM diagnostic equipment will be introduced, discussed, and demonstrated. Lecture 2 hours per week. May be repeated as needed.
- AUT 233 (4 CR.) Hybrid Electric Vehicle Technology**  
Prerequisites: AUT 241 and AUT 242. Presents technologies used in hybrid electrical vehicles (HEV). Includes safety, theory, diagnosis, and component replacement. Covers automotive electronics: theory, operation, and testing. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- AUT 236 (4 CR.) Automotive Climate Control**  
Prerequisite: AUT 241. Introduces principles of refrigeration, air conditioning controls and adjustment, and general servicing of automotive air conditioning systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- AUT 241–242 (4 CR.) (4 CR.) Automotive Electricity I–II**  
Prerequisite for AUT 242: AUT 241. Introduces electricity and magnetism, symbols, and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments, gauges, and accessories. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- AUT 245 (4 CR.) Automotive Electronics**  
Prerequisite: AUT 242. Introduces field of electronics as it applies to the modern automobile. Emphasizes basic circuit operation, diagnosis, and repair of digital indicator and warning systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- AUT 265 (4 CR.) Automotive Braking Systems**  
Presents operation, design, construction, repair, and servicing of braking systems, including Anti-Lock Brake Systems (ABS). Explains uses of tools and test equipment, evaluation of test results, and estimation of repair cost for power, standard, and disc brakes. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- AUT 266 (4 CR.) Auto Alignment, Suspension, and Steering**  
Introduces use of alignment equipment in diagnosing, adjusting, and repairing front and rear suspensions. Deals with repair and servicing of power and standard steering systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- AUT 285 (4 CR.) Automotive Service and Practical Applications Capstone**  
Provides practice with technical and workplace skills in an automotive shop environment where diagnosis, repair, quality control, and service learning come together. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Biology

- BIO 101 (4 CR.) General Biology I**  
Prerequisite: Competency in Math Essentials Units MTT 1–3 as demonstrated through placement and diagnostic tests, or by completion through unit 3 in an MTT course. Competency in Math Essentials Units MTT 1–5 or equivalent is desirable. Focuses on foundations in cellular structure, metabolism, and genetics in an evolutionary context. Explores the core concepts of evolution; structure and function; information flow, storage, and exchange; pathways and transformations of energy and matter; and systems biology. Emphasizes process of science, interdisciplinary approach, and relevance of biology to society. Part I of a two-course sequence. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 102 (4 CR.)****General Biology II**

Prerequisite: BIO 101. Focuses on diversity of life, anatomy and physiology of organisms, and ecosystem organization and processes in an evolutionary context. Explores the core concepts of evolution; structure and function; information flow, storage, and exchange; pathways and transformations of energy and matter; and systems biology. Emphasizes process of science, interdisciplinary approach, and relevance of biology to society. Part II of a two-course sequence. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**BIO 110 (4 CR.)****General Botany**

Prerequisite: placement into ENG 111. Emphasizes plant life cycles, anatomy, morphology, taxonomy, and evolution. Considers the principles of genetics, ecology, and physiology. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 120 (4 CR.)****General Zoology**

Prerequisite: placement into ENG 111. Presents basic biological principles, and emphasizes structure, physiology, and evolutionary relationships of invertebrates and vertebrates. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 141–142 (4 CR.) (4 CR.)****Human Anatomy and Physiology I–II**

Prerequisite: Placement into ENG 111. Prerequisite for BIO 142: BIO 141 or division approval. Integrates anatomy and physiology of cells, tissues, organs, and systems of the human body. Integrates concepts of chemistry, physics, and pathology. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 146 (3 CR.)****Human Heredity**

Surveys basic principles of classical and molecular genetics as applied to humans. Lecture 3 hours per week.

**BIO 147 (1 CR.)****Basic Laboratory Calculations for Biotechnology**

Prerequisite: program placement, coenrollment in BIO 250, or Biotechnology program head permission. Prepares students to work effectively in a scientific laboratory through instruction of the metric system, scientific notation, exponents, solution making, pH readings, and the creation of standard curves for data analysis. Focus will be on quantitative skills

needed to perform most basic laboratory work. Skills will be practiced and reinforced through application-based problems and hands-on activities. Laboratory 2 hours per week.

**BIO 150 (4 CR.)****Introductory Microbiology**

Prerequisite: BIO 101 or BIO 141. Studies the general characteristics of microorganisms. Emphasizes their relationships to individual and community health. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 165 (2 CR.)****Principles in Regulatory and Quality Environments for Biotechnology**

Prerequisites: program placement, BIO 180 with a “C” or better or Biotechnology program head permission. Prepares students to work effectively in a scientific field and explains the basics of the regulatory and quality environments encountered in a biotechnology or pharmaceutical field. Surveys the principles and practices used on a day-to-day basis in regulatory affairs and quality systems. Lecture 2 hours per week.

**BIO 173 (4 CR.)****Biology for Biotechnology**

Introduces the student to biological concepts essential to the understanding of biotechnology. Focuses on the structural organization, function, and chemical nature of the cell. Studies cellular processes such as membrane transport, information processing, reproduction, and heredity. Emphasizes laboratory methods of biotechnology. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**BIO 180 (1 CR.)****Introduction to Careers in Biotechnology**

Prerequisite: program placement or Biotechnology program head permission. Exposes the student to the field of biotechnology including possible future employment opportunities. Introduces the requirements to complete training and facilitates the student’s need in the construction of a student plan and educational goal. Lecture 1 hour per week.

**BIO 205 (4 CR.)****General Microbiology**

Prerequisites: CHM 111, CHM 112, and two of the following: BIO 101, BIO 102, BIO 110, BIO 120, BIO 141, BIO 142, or division approval. Examines morphology, genetics, physiology, ecology, and control of microorganisms. Emphasizes application of microbiological techniques to selected fields. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

- BIO 206** (4 CR.) **Cell Biology**  
Prerequisites: BIO 101, CHM 111, and one of the following: CHM 112, BIO 102, BIO 110, BIO 120, BIO 141, BIO 142, or division approval. Introduces the ultrastructure and functions of cells. Emphasizes cell metabolism, cell division, and control of gene expression. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.
- BIO 226** (4 CR.) **Vertebrate Zoology**  
Prerequisites: BIO 101–102 or division approval. Focuses on structure, embryology, function, ecology, classification, and evolution of vertebrate animals. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.
- BIO 231–232** (4 CR.) (4 CR.) **Human Anatomy and Physiology I–II**  
Prerequisites: CHM 111, CHM 112, and two of the following: BIO 101, BIO 102, BIO 110, BIO 120, BIO 141, BIO 142, or division approval. Prerequisite for BIO 232: BIO 231 or division approval. Integrates the study of gross and microscopic anatomy with physiology, emphasizing the analysis and interpretation of physiological data. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.
- BIO 250** (3 CR.) **Biotechnology Research Methods and Skills**  
Prerequisites: program placed and coenrollment in BIO 253. Provides students with knowledge and advanced laboratory skills needed for employment in the biotechnology industry. Focuses on use of basic and specialized lab equipment and techniques such as solution chemistry, cell culture, DNA extraction and analysis, and protein extraction and analysis. Emphasis is on lab safety, documentation, quality control, and use of standard operating procedures. Lecture 1 hour per week. Laboratory 6 hours per week. Total 7 hours per week.
- BIO 251** (4 CR.) **Protein Applications in Biotechnology**  
Prerequisites: BIO 250 and BIO 253 with a “C” or better. Prepares students to understand protein structure and function and teaches the laboratory skills needed to successfully work with proteins. Focuses on levels of protein structure and protein function. Includes common laboratory assays for protein synthesis, purification, detection, and quantification. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- BIO 252** (4 CR.) **Nucleic Acid Methods**  
Prerequisites: BIO 250 and BIO 253 with a “C” or better. Provides students with advanced laboratory skills needed for employment in the biotechnology industry. Focuses on use of basic and specialized lab equipment and techniques such as solution chemistry, cell culture, DNA extraction and analysis, and protein extraction and analysis. Emphasizes lab safety, documentation, quality control, and use of standard operating procedures. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- BIO 253** (3 CR.) **Biotechnology Concepts**  
Prerequisites: program placed, BIO 101 or BIO 173 with a “C” or better. Explores the growing field of biotechnology ranging from basic cellular and molecular biology concepts to both basic and advanced laboratory techniques. Emphasizes the application of biotechnology to medicine, agriculture, environmental science, and forensics. Includes discussion of the business, regulatory/legal, ethical, and societal issues of this topic as well as the growing field of bioinformatics. Lecture 3 hours per week.
- BIO 254** (2 CR.) **Capstone Seminar in Biotechnology**  
Prerequisites: students must have completed 75% of their program requirements including BIO 147, BIO 165, BIO 180, BIO 250, and BIO 253 with a “C” or better, or Biotechnology program head permission. Integrates principles, theories, and methods learned in prior courses in biotechnology. Promotes exposure to real-world experience through completion of group project(s) having a professional focus. Emphasizes collaboration, literature research, proposal development, and communication and presentation skills. Lecture 2 hours per week.
- BIO 255** (2 CR.) **Bioinformatics and Computer Applications in Biotechnology**  
Prerequisites: program placement, BIO 250 and BIO 253 with a “C” or better, or Biotechnology program head permission. Covers basic computer concepts and Internet skills and uses a software suite, which includes word processing, spreadsheet, database, and presentation software to demonstrate skills. Introduces students to basic online tools and resources to retrieve and analyze biological data, such as DNA, RNA, and protein sequences, structures, functions, pathways, and interactions. Includes hands-on sessions to allow students to become familiar with these resources and their navigation and applications. Lecture 2 hours per week.



**BIO 256 (4 CR.)****General Genetics**

Prerequisites: any two of the following courses: BIO 101, BIO 102, BIO 110, BIO 120, BIO 141, BIO 142, or division approval. Explores the principles of genetics ranging from classical Mendelian inheritance to the most recent advances in the biochemical nature and function of the gene. Includes experimental design and statistical analysis. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 270 (4 CR.)****General Ecology**

Prerequisites: any two of the following courses: BIO 101, BIO 102, BIO 110, BIO 120, or division approval. Studies interrelationships between organisms and their natural and cultural environments with emphasis on populations, communities, and ecosystems. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 275 (4 CR.)****Marine Ecology**

Prerequisites: any two of the following courses: BIO 101, BIO 102, BIO 110, BIO 120, or division approval. Applies ecosystem concepts to marine habitats. Includes laboratory and field work. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Broadcasting

**BCS 140 (3 CR.)****Introduction to Mass Media**

Prerequisite: placement into ENG 111. Studies the development of mass media communication, including the history and technological evolution of print and electronic media. Emphasizes mass communication in the United States. Lecture 3 hours per week.

## Building

**BLD 20 (2 CR.)****Introduction to Plumbing**

Presents an introduction to the principles and practices of plumbing as related to light construction. Enables students to plan, prepare for, and install supply and waste lines, and install kitchen and bath fixtures. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**BLD 101 (3 CR.)****Construction Management I**

Presents overviews of all phases of construction project management. Introduces students to philosophy, responsibilities, methodology, and techniques of the construction process. Introduces topics related to the construction and design industries, organizations, construction contracts, bidding procedures, insurance, taxes, bonding, cost accounting, and business methods including basic computer usage, safety, and general project management procedures. Lecture 3 hours per week.

**BLD 102 (3 CR.)****Construction Management II**

Emphasizes advanced management techniques and methodology. Includes engineering economics, accounting principles, life cycle costing, value engineering, systems analysis with computer applications, work improvement, quality control, and a broad overview of the construction management profession. Lecture 3 hours per week.

**BLD 110 (3 CR.)****Introduction to Construction**

Covers basic knowledge and requirements needed in the construction trades. Introduces use of tools and equipment, with emphasis on construction safety, including personal and tool safety. Provides a working introduction to basic blueprint reading and fundamentals of construction mathematics. Lecture 3 hours per week.

**BLD 165 (2 CR.)****Construction Field Operations**

Introduces areas of construction field management that relate directly to on-the-job requirements of construction operations viewed from the construction superintendent's standpoint. Includes theories of project management and field supervision; utilization of equipment, labor, and material; construction site development; requirements of field scheduling; management input requirements; job recording and documentation; and supervision responsibility. May include field trips to project sites. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**BLD 200 (2–3 CR.)****Sustainable Construction**

Prerequisites: BLD 101 plus BLD 165 or instructor's permission. Teaches students the specialized construction management best practices that must be utilized when managing a sustainable project. Course will include industry standards for green construction as identified by popular building rating systems. Lecture 2–3 hours per week.

**BLD 215** (2 CR.)  
**OSHA 30 Construction Safety**  
Prerequisite: OSHA 10 certification or department approval. Covers all topics included in the OSHA 30-hour course. Lecture 2 hours per week.

**BLD 231** (3 CR.)  
**Construction Estimating I**  
Focuses on materials take-off and computing quantities from working drawings and specifications. Includes methods for computing quantities of concrete, steel, masonry, roofing, and excavation. Deals with pricing building components, materials and processes, as well as transportation and handling costs, mark-up discount procedures, equipment cost, and labor rates. Lecture 3 hours per week.

**BLD 232** (3 CR.)  
**Construction Estimating II**  
Prerequisite: BLD 231. Presents an introduction to computer programs for construction estimating. Produces a cost estimate for a major project with the aid of a computer program. Lecture 3 hours per week.

**BLD 241** (3 CR.)  
**Construction Managing III**  
Presents fundamentals of construction supervision including responsibilities of the construction superintendent, operations manager, general superintendent and project engineer, with factors relating to their work and that of their subordinates, aspects of job leadership, and effective human relations as related to efficient supervision. Lecture 3 hours per week.

**BLD 242** (3 CR.)  
**Construction Management IV**  
Presents a comprehensive overview of all aspects of construction law and labor relations, exposing the students to responsibilities and requirements. Includes history of labor relations in the United States, trade unionism, federal labor laws and their direct effect on construction, OSHA (Occupational Safety and Health Act) laws, and regulations that apply. Lecture 3 hours per week.

**BLD 247** (3 CR.)  
**Construction Planning and Scheduling**  
Introduces principles of planning and scheduling of a construction project. Includes sequence of events and processes on a construction site. Studies scheduling techniques including the critical path method. Lecture 3 hours per week.

**BLD 249** (3 CR.)  
**Carpentry II**  
Presents advanced concepts of carpentry as they relate to residential/light construction, including theoretical and practical applications. Covers advanced framing techniques, finish and trim systems, and calculations commonly required in all phases of light construction. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Business Management and Administration

**BUS 100** (3 CR.)  
**Introduction to Business**  
A satisfactory placement score for ENG 111 is strongly recommended. Presents a broad introduction to the functioning of business enterprise within the U.S. economic framework. Introduces economic systems, essential elements of business organization, production, human resource management, marketing, finance, and risk management. Develops business vocabulary. Lecture 3 hours per week.

**BUS 111** (3 CR.)  
**Principles of Supervision I**  
Teaches the fundamentals of supervision, including the primary responsibilities of the supervisor. Introduces factors relating to the work of supervisor and subordinates. Covers aspects of leadership, job management, work improvement, training and orientation, performance evaluation, and effective employee/supervisor relationships. Lecture 3 hours per week.

**BUS 116** (3 CR.)  
**Entrepreneurship**  
Presents the various steps considered necessary when going into business. Includes areas such as product-service analysis, market research evaluation, setting up books, ways to finance startup, operations of the business, development of business plans, buyouts versus starting from scratch, and franchising. Uses problems and cases to demonstrate implementation of these techniques. Lecture 3 hours per week.

**BUS 117** (3 CR.)  
**Leadership Development**  
Covers interpersonal relations in hierarchical structures. Examines the dynamics of teamwork, motivation, handling change and conflict, and how to achieve positive results through others. Lecture 3 hours per week.

- BUS 121 (3 CR.) Business Mathematics I**  
Applies mathematical operations to business processes and problems. Reviews operations, equations, percents, sales and property taxes, insurance, checkbook and cash records, wage and payroll computations, depreciation, overhead, inventory turnover and valuation, financial statements, ratio analysis, commercial discounts, markup, and markdown. Lecture 3 hours per week.
- BUS 125 (3 CR.) Applied Business Mathematics**  
Applies mathematical operations to business process and problems such as wages and payroll, sales and property taxes, checkbook records and bank reconciliation, depreciation, overhead, distribution of profit and loss in partnerships, distribution of corporate dividends, commercial discounts, markup, markdown, simple interest, present values, bank discount notes, multiple payment plans, compound interest, annuities, sinking funds, and amortization. Lecture 3 hours per week.
- BUS 165 (3 CR.) Small Business Management**  
Identifies management concerns unique to small business. Introduces the requirements necessary to initiate a small business, and identifies the elements comprising a business plan. Presents information establishing financial and administrative controls, developing a marketing strategy, managing business operations, and the legal and government relationships specific to small businesses. Lecture 3 hours per week.
- BUS 200 (3 CR.) Principles of Management**  
Teaches management and the management functions of planning, organizing, leading, and controlling. Focuses on application of management principles to realistic situations managers encounter as they attempt to achieve organizational objectives. Lecture 3 hours per week.
- BUS 201 (3 CR.) Organizational Behavior**  
Presents a behaviorally oriented course combining the functions of management with the psychology of leading and managing people. Focuses on the effective use of human resources through understanding human motivation and behavior patterns, conflict management and resolution, group functioning and process, the psychology of decision-making, and the importance of recognizing and managing change. Lecture 3 hours per week.
- BUS 202 (3 CR.) Applied Management Principles**  
Prerequisite: BUS 200. Focuses on management practices and issues. May use case studies and/or management decision models to analyze problems in developing and implementing a business strategy while creating and maintaining competitive advantage. Lecture 3 hours per week.
- BUS 204 (3 CR.) Project Management**  
Provides students with knowledge of essential skills and techniques necessary to lead or participate in projects assigned to managerial personnel. Covers time and task scheduling, resource management, problem solving strategies, and other areas related to managing a project. Lecture 3 hours per week.
- BUS 205 (3 CR.) Human Resource Management**  
Introduces employment, recruitment, selection, and placement of personnel, forecasting, job analysis, job descriptions, training methods and programs, employee evaluation systems, compensation, benefits, and labor relations. Lecture 3 hours per week.
- BUS 208 (3 CR.) Quality and Productivity Management**  
Focuses on the key quality improvement concepts regarding products and services, customers and suppliers, and systems and processes that make quality a part of the work life of an organization. Emphasizes the role of teams, including team meeting skills and techniques, and a variety of quality-improvement tools, such as flowcharts, run charts, Pareto diagrams, cause and effect diagrams, evaluation matrices, and implementation roadmaps. Lecture 3 hours per week.
- BUS 212 (3 CR.) Disaster Recovery Planning for Managers**  
Covers developing a plan for an organization to get computer operations back to their pre-existing state as soon as possible after a disaster. Covers documenting existing technology and the complete steps in the disaster recovery process. Emphasis on policies and procedures to prevent the loss of data and elimination of system downtime. Includes the completion of a disaster recovery plan for an organization and/or department. Lecture 3 hours per week.

- BUS 220 (3 CR.)**  
**Introduction to Business Statistics**  
 Introduces statistics as a tool in decision-making. Emphasizes ability to collect, present, and analyze data. Employs measures of central tendency and dispersion, statistical inference, index numbers, probability theory, and time series analysis. Lecture 3 hours per week.
- BUS 221 (3 CR.)**  
**Business Statistics I**  
 Prerequisite: MTH 161 or division approval. Focuses on statistical methodology in the collection, organization, presentation, and analysis of data; concentrates on measures of central tendency, dispersion, probability concepts and distribution, sampling, statistical estimation, normal and T distribution, and hypotheses for means and proportions. Lecture 3 hours per week.
- BUS 222 (3 CR.)**  
**Business Statistics II**  
 Prerequisite: BUS 221 or division approval. Continues study of inferential statistics and application of statistical techniques and methodology in business. Includes analysis of variance, regression, and correlation measurement of business and economic activity through the use of index numbers, trend, cyclical, and seasonal effects and the Chi-square distribution and other nonparametric techniques. Lecture 3 hours per week.
- BUS 224 (4 CR.)**  
**Statistical Analysis for Business**  
 Prerequisite: MTH 161 or division approval. Discusses the business statistics topics typically covered in business degree programs. Covers frequency distributions, descriptive measures, probability concepts, probability distributions, sampling, hypotheses testing for means and proportions, Chi-square distribution, simple linear regression and briefly, multiple linear regression. Lecture 4 hours per week.
- BUS 226 (3 CR.)**  
**Computer Business Applications**  
 Prerequisite: keyboarding competence. Provides a practical application of software packages including spreadsheets, word processing, database management, and presentation graphics. Includes the use of programs in accounting techniques, word processing, and management science application. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
- BUS 241 (3 CR.)**  
**Business Law I**  
 Develops a basic understanding of the U.S. legal environment. Introduces property and contract law, agency and partnership liability, and government regulatory law. Students will be able to apply these legal principles to landlord/tenant disputes, consumer rights issues, employment relationships, and other business transactions. Lecture 3 hours per week.
- BUS 242 (3 CR.)**  
**Business Law II**  
 Focuses on business organization and dissolution, bankruptcy, and Uniform Commercial Code. Introduces international law and the emerging fields of e-commerce and Internet law. Lecture 3 hours per week.
- BUS 260 (3 CR.)**  
**Planning for Small Business**  
 Provides knowledge of the development of a business plan, which can be used to acquire capital and serve as a management guide. Combines knowledge that has been acquired in the areas of planning, management, and finance using pro forma statements and marketing. Covers Internet searching techniques. Recommended as a capstone course. Lecture 3 hours per week.
- BUS 265 (3 CR.)**  
**Ethical Issues in Management**  
 Examines the legal, ethical, and social responsibilities of management. May use cases to develop the ability to think and act responsibly. Lecture 3 hours per week.
- BUS 270 (3 CR.)**  
**Interpersonal Dynamics in the Business Organization**  
 Focuses on intra- and interpersonal effectiveness in the business organization. Includes topics such as planning and running effective meetings, networking and politicking, coaching and mentoring, making effective and ethical decisions, developing interpersonal skills that are essential to effective managers, and to improve skills in verbal, non-verbal, and written communication. Lecture 3 hours per week.
- BUS 280 (3 CR.)**  
**Introduction to International Business**  
 Studies the problems, challenges, and opportunities that arise when business operations or organizations transcend national boundaries. Examines the functions of international business in the economy, international and transnational marketing, production, and financial operations. Lecture 3 hours per week.
- Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Chemistry

### **CHM 101-102 (4 CR.) (4 CR.)**

#### **Introductory Chemistry I-II**

CHM 101 prerequisites: satisfactory placement scores for MTH 154 (or completion of unit 5 in an MTT course) and ENG 111. Prerequisite for CHM 102: satisfactory completion of CHM 101 (or its equivalent). Designed for the non-science major. Emphasizes experimental and theoretical aspects of inorganic, organic, and biological chemistry. Discusses general chemistry concepts as they apply to issues within our society and environment. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **CHM 111-112 (4 CR.) (4 CR.)**

#### **General Chemistry I-II**

CHM 111 prerequisites: satisfactory placement scores for MTH 161 (or completion through unit 9 in an MTT course) and ENG 111. High school chemistry also strongly recommended. Prerequisite for CHM 112: satisfactory completion of CHM 111 (or its equivalent). Requires a strong background in mathematics. Designed primarily for science and engineering majors. Explores the fundamental laws, theories, and mathematical concepts of chemistry. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **CHM 121-122 (4 CR.) (4 CR.)**

#### **Health Science Chemistry I-II**

CHM 121 prerequisites: satisfactory placement scores for MTH 154 (or completion through unit 5 in an MTT course) and ENG 111. Prerequisite for CHM 122: CHM 121. Introduces the health science student to concepts of inorganic, organic, and biological chemistry as applicable to the allied health profession. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **CHM 241-242 (3 CR.) (3 CR.)**

#### **Organic Chemistry I-II**

Prerequisites for CHM 241: CHM 112 or equivalent and a satisfactory placement score for ENG 111. Prerequisite for CHM 242: CHM 241. Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Lecture 3 hours per week.

### **CHM 245-246 (2 CR.) (2 CR.)**

#### **Organic Chemistry Laboratory I-II**

Prerequisite or corequisite for CHM 245: CHM 241. Prerequisite or corequisite for 246: CHM 242 and satisfactory completion of CHM 245. Is taken by chemistry and chemical engineering majors. Includes qualitative organic analysis. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

### **CHM 260 (3 CR.)**

#### **Introductory Biochemistry**

Prerequisites: CHM 112 and a satisfactory placement score for ENG 111. Explores fundamentals of biological chemistry. Includes study of macromolecules, metabolic pathways, and biochemical genetics. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Childhood Development

### **CHD 118 (3 CR.)**

#### **Language Arts for Young Children**

Emphasizes the early development of children's language and literacy skills. Presents techniques and methods for supporting all aspects of early literacy. Surveys children's literature, and examines elements of promoting oral literacy, print awareness, phonological awareness, alphabetic principle, quality storytelling, and story reading. Addresses strategies for intervention and support for exceptional children and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **CHD 119 (3 CR.)**

#### **Introduction to Reading Methods**

Corequisite: ENG 111 and functional literacy in the English language; reading at the 12th grade level. Focuses on promoting language and literacy skills as the foundation for emergent reading. Emphasizes phonetic awareness and alphabetic principles, print awareness and concepts, comprehension, and early reading and writing. Addresses strategies for intervention and support for exceptional children and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **CHD 120 (3 CR.)**

#### **Introduction to Early Childhood Education**

Introduces early childhood development through activities and experiences in early childhood, pre-kindergarten, kindergarten, and primary programs. Investigates classroom organization and procedures, and use of classroom time and materials, approaches to education for young children, professionalism, and curricular procedures. Lecture 3 hours per week.

### **CHD 145 (3 CR.)**

#### **Teaching Art, Music, and Movement to Children**

Focuses on children's exploration, play, and creative expression in the areas of art, music, and movement. Emphasis will be on developing strategies for using various open-ended media representing a range of approaches in creative thinking. Addresses strategies



for intervention and support for exceptional children and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**CHD 146 (3 CR.)  
Math, Science, and Social Studies for Children**

Provides experiences in content, methods, and materials for the development of math, science, and social studies skills in children. Emphasis will be on developing strategies for using various resources to facilitate children's construction of knowledge. Addresses strategies for intervention and support for children with special needs and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**CHD 164 (3 CR.)  
Working with Infants and Toddlers in Inclusive Settings**

Examines developmental and behavioral principles and practices, and how these provide the most developmentally suitable curriculum and learning environment for very young children. Includes working with very young children with typical development, as well as those who are gifted or have developmental delays or disabilities. Lecture 3 hours per week.

**CHD 165 (3 CR.)  
Observation and Participation in Early Childhood/Primary Settings**

Focuses on observation as the primary method for gathering information about children in early childhood settings. Emphasizes development of skills in the implementation of a range of observation techniques. 2 hours seminar. 2 hours field placement. Total 4 hours per week. May be taken again for credit.

**CHD 166 (3 CR.)  
Infant and Toddler Programs**

Examines child growth and development from birth to 36 months. Focuses on development in the physical, cognitive, social, emotional, and language domains. Emphasizes the importance of the environment and relationships for healthy brain development during the child's first three years of life. Investigates regulatory standards for infant/toddler care giving. Lecture 3 hours per week.

**CHD 167 (3 CR.)**  
CDA Theories and Applications:  
Resource File Supports the student/CDA candidate in completing the Professional Resource File and all documentation required for the national CDA credential. Lecture 3 hours per week.

**CHD 205 (3 CR.)  
Guiding the Behavior of Children**

Explores the role of the early childhood educator in supporting emotional and social development of children, and in fostering a sense of community. Presents practical strategies for encouraging pro-social behavior, conflict resolution, and problem solving. Emphasizes basic skills and techniques in child guidance. Lecture 3 hours per week.

**CHD 210 (3 CR.)  
Introduction to Exceptional Children**

Reviews the history of and legal requirements for providing intervention and educational services for young children with special needs. Studies the characteristics of children with a diverse array of needs and developmental abilities. Explores concepts of early intervention, inclusion, guiding behavior, and adapting environments to meet children's needs. Lecture 3 hours per week.

**CHD 215 (3 CR.)  
Models of Early Childhood Education Programs**

Studies and discusses the various models and theories of early childhood education programs including current trends and issues. Presents state licensing and staff requirements. Lecture 3 hours per week.

**CHD 216 (3 CR.)  
Early Childhood Programs, Schools, and Social Change**

Explores methods of developing positive, effective relations with families to enhance their developmental goals for children. Considers culture and other diverse needs, perspectives, and abilities of families and educators. Emphasizes advocacy and public policy awareness as an important role of early childhood educators. Describes risk factors and identifies community resources. Lecture 3 hours per week.

**CHD 225 (3 CR.)  
Curriculum Development for School-Age Child Care**

Explores the creative activities, techniques, interactions, and program development that promote positive social and emotional growth in school-age children. Emphasizes positive development through everyday programming and experiences. Lecture 3 hours per week.

**CHD 230 (3 CR.)  
Behavior Management for School-Age Child Care**

Discusses the development of social skills that school-age children need for self-management, including self-discipline, self-esteem, and coping with stress and anger. Explores ways to effectively guide

and discipline school-age children, focusing on how adults can facilitate positive pro-social and self-management skills. Lecture 3 hours per week.

**CHD 235 (3 CR.)**  
**Health and Recreation for School-Age Child Care**

Examines the physical growth of school-age children and the role of health and recreation in school-age child development. Explores the use of medication, misuse of drugs, health issues of children, and the availability of community resources. Lecture 3 hours per week.

**CHD 265 (3 CR.)**  
**Advanced Observation and Participation in Early Childhood/Primary Settings**

Focuses on implementation of activity planning and observation of children through participation in early childhood settings. Emphasizes responsive teaching practices and assessment of children's development. Reviews legal and ethical implications of working with children. 2 hours seminar. 2 hours field placement. Total 4 hours per week.

**CHD 270 (3 CR.)**  
**Administration of Childcare Programs**

Examines the skills needed for establishing and managing early childhood programs. Emphasizes professionalism and interpersonal skills, program planning, staff selection and development, creating policies, budgeting, and developing forms for record keeping. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Chinese

**CHI 101-102 (5 CR.) (5 CR.)**  
**Beginning Chinese I-II**

Prerequisite for CHI 102: CHI 101. Introduces understanding, speaking, reading, and writing skills and emphasizes basic Chinese sentence structure. Lecture 5 hours per week.

**CHI 103-104 (3 CR.) (3 CR.)**  
**Beginning Spoken Chinese I-II**

Prerequisite for CHI 104: CHI 103. Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

**CHI 201-202 (4 CR.) (4 CR.)**  
**Intermediate Chinese I-II**

Prerequisite for CHI 201: CHI 102. Prerequisite for CHI 202: CHI 201. Offers intensive practice in comprehending and speaking Chinese, with emphasis on developing structure and fluency. Lecture 4 hours per week.

## Civil Engineering Technology

**CIV 171 (3 CR.)**  
**Surveying I**

Prerequisite: MTH 162 or MTH 167 or division approval. Introduces surveying equipment, procedures, and computations including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations, and introduction to topography. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**CIV 172 (3 CR.)**  
**Surveying II**

Prerequisite: CIV 171. Introduces surveys for transportation systems including the preparation and analysis of topographic maps, horizontal and vertical curves, earthwork, and other topics related to transportation construction. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**CIV 210 (5 CR.)**  
**Structural Systems**

Prerequisite: EGR 130 or equivalent. Introduces the application of the principles of mechanics and strength of materials to the analysis and design of civil engineering structures, specifically in the areas of building and highway construction. Lecture 5 hours per week.

**CIV 225 (2 CR.)**  
**Soil Mechanics**

Focuses on soil in its relationship to engineering construction. Includes soil composition and structure, weight-volume relationships, sampling procedures, classification systems, water in soil, stresses, strains, bearing capacity, settlement and expansion, compaction, stabilization, and introduction to foundations and retaining walls. Lecture 2 hours per week.

**CIV 226 (1 CR.)**  
**Soil Mechanics Laboratory**

Introduces practical soil sampling; classification of unified, ASTM and ASSHTO specifications; laboratory testing of soils to predict engineering performance. Laboratory 2 hours per week.

**CIV 228 (2 CR.)**  
**Concrete Technology**

Introduces properties of Portland cement concrete, methods of mix design and adjustment, transportation, placement, and curing in accordance with ACI and PCA recommended procedures. Lecture 2 hours per week.

**CIV 229 (1 CR.)**  
**Concrete Laboratory**

Focuses on mixing, curing, testing, and quality control of concrete. Laboratory 2 hours per week.

**CIV 240 (3 CR.)**  
**Fluid Mechanics and Hydraulics**

Prerequisite: Statics or divisional approval. Introduces the principles of fluid flow and development of practical hydraulics resulting from study of fluid statics, flow of real fluid in pipes, multiple pipe lines, liquid flow in open channels, and fluid measurement techniques. Lecture; 3 hours per week.

**CIV 256 (3 CR.)**  
**Global Positioning Systems for Land Surveying**

Introduces principles of satellite-based surveying and presents Global Positioning System (GPS) as it is utilized in land surveying and the various components of the GPS technology and the techniques through which the GPS technology may be used in land surveys. Utilizes field surveys using the GPS equipment as part of the laboratory activities. [This course covers the same content as GIS 256. Credit will not be granted for both courses]. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**CIV 261 (3 CR.)**  
**Advanced Surveying**

Prerequisite: CIV 172 or equivalent. Introduces layout of curves under complex field conditions. Explores route surveying, vertical curves, slope boundaries, legal aspects of surveying, original surveys and resurveys, public land surveys. Discusses topics in surveying, astronomy, and celestial observations. Provides drills in the use of theodolite and electronic equipment. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**CIV 265 (3 CR.)**  
**Curves & Earthwork**

Prerequisite: CIV 171. Studies computations of simple, compound and transition curves; grades and vertical curves; earthwork and haul quantities. Lecture 3 hours per week.

**CIV 280 (3 CR.)**  
**Introduction to Environmental Engineering**

Introduces the engineering elements of water and wastewater treatment, water distribution and wastewater collection systems, solid and hazardous waste, erosion control, and storm water management. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Communication Studies and Theatre

**CST 100 (3 CR.)**  
**Principles of Public Speaking**

Applies theory and principles of public address with emphasis on preparation and delivery. Lecture 3 hours per week.

**CST 110 (3 CR.)**  
**Introduction to Communication**

Examines the elements affecting speech communication at the individual, small group, and public communication levels with emphasis on practice of communication at each level. Lecture 3 hours per week.

**CST 111 (3 CR.)**  
**Voice and Diction I**

Enables students to improve pronunciation, articulation, and vocal quality. Includes applied phonetics. Part I of II. Lecture 3 hours per week.

**CST 114 (3 CR.)**  
**Introduction to Mass Media**

Examines the history and current understanding of mass communication. Covers print media (newspapers, magazines, and books), electronic media (radio, television, film, the Internet), advertising, public relations, and mass media theory, research, and ethics. Lecture 3 hours per week.

**CST 115 (3 CR.)**  
**Small Group Communication**

Emphasizes the development of presentational ability in a group, decision-making, group maintenance, and leadership and participant skills. Incorporates a preliminary study of group dynamics. Lecture 3 hours per week.

**CST 116 (1-6 CR.)**  
**Speech Workshop**

Enables work in competitive speech activities such as debate, oratory, impromptu speaking, prose and poetry reading, and rhetorical criticism. May be repeated for credit. Variable hours per week. 1-6 credits (may be repeated for up to 6 credits.)

<p><b>CST 120</b> <b>Screenwriting</b> Focuses on the craft of writing for the screen. Examines film and television screenplay structure. Analyzes dramatic strategies in film and television. Learn and apply correct script form and creatively engage in the various stages of original scriptwriting. This course is equivalent to PHT 120. Credit will not be awarded for both. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>	<p><b>CST 137</b> <b>Oral Interpretation</b> Studies the theory and practice of performing various types of literature: prose, poetry, and drama. Emphasizes the relationship among the oral interpreter, the literary work, and the audience. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>
<p><b>CST 125</b> <b>Interviewing</b> Studies theory and practice of interviewing, emphasizing the informational interview, the journalistic interview, the employment interview, and the performance-appraisal interview. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>	<p><b>CST 140</b> <b>Acting for the Camera</b> Explores the practical and artistic elements involved in acting for the camera through such activities as: performance of commercial, film, and television scripts; developing knowledge of the technical side of camera work and the study of the business of acting. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</p>	<p><b>(3 CR.)</b></p>
<p><b>CST 126</b> <b>Interpersonal Communication</b> Teaches interpersonal communication skills for both daily living and the world of work. Includes perception, self-concept, self-disclosure, listening and feedback, nonverbal communication, attitudes, assertiveness and other interpersonal skills. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>	<p><b>CST 141</b> <b>Theatre Appreciation I</b> Aims to increase knowledge and enjoyment of theatre. Considers process, style, organization, written drama, and performed drama. Part I of II. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>
<p><b>CST 127</b> <b>Workshop in Interpersonal Skills</b> Emphasizes practical applications of career-oriented oral communication skills at the interpersonal level. Lecture 2 hours per week.</p>	<p><b>(2 CR.)</b></p>	<p><b>CST 145</b> <b>Stagecraft</b> Acquaints the student with fundamental methods, materials, and techniques of set construction for the stage. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</p>	<p><b>(3 CR.)</b></p>
<p><b>CST 130</b> <b>Introduction to the Theatre</b> Surveys the principles of drama, the development of theatre production, and selected plays to acquaint the student with various types of theatrical presentations. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>	<p><b>CST 151</b> <b>Film Appreciation I</b> Provides students with a critical understanding of film through the discussion and viewing of motion pictures with emphasis upon the study of film history and the forms and functions of film. Students will develop skills to analyze the shared social, cultural, and historical influences of films and their contexts. Part I of II. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>
<p><b>CST 131-132</b> <b>Acting I-II</b> Develops personal resources and explores performance skills through such activities as theatre games, role playing, improvisation, work on basic script units, and performance of scenes. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</p>	<p><b>(3 CR.) (3 CR.)</b></p>	<p><b>CST 152</b> <b>Film Appreciation II</b> Provides students with a critical understanding of film through the discussion and viewing of motion pictures with emphasis upon the study of film history and the forms and functions of film. Students will develop skills to analyze the shared social, cultural, and historical influences of films and their contexts. Part II of II. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>
<p><b>CST 136</b> <b>Theatre Workshop</b> Enables students to work in various activities of play production. The student participates in performance, set design, stage carpentry, sound, costuming, lighting, stage managing, props, promotion, or stage crew. May be repeated for credit. Variable hours per week.</p>	<p><b>(1-6 CR.)</b></p>	<p><b>CST 160</b> <b>Improvisation I</b> Explores the basic techniques of improvisation through short and long form exercises and the study of the history of improvisation and improvisation theory and practices. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>

<p><b>CST 200</b> (3 CR.)  <b>Advanced Public Speaking</b>  Prerequisite: CST 100 or division approval. Focuses on preparation and delivery of various advanced forms of public address. Lecture 3 hours per week.</p>	<p><b>CST 250</b> (3 CR.)  <b>The Art of the Film</b>  Introduces the art of the film through a survey of film history; content includes viewing, discussion, and analysis of selected films. Studies film techniques such as composition, shot sequence, lighting, visual symbolism, sound effects, and editing. Lecture 3 hours per week.</p>
<p><b>CST 201</b> (3 CR.)  <b>Introduction to Communication Theory and Research</b>  Introduces the field of communication, emphasizing perspectives on theory and research, topical areas within the discipline, basic research methodologies, and a survey of theories in those areas. Covers basic procedures for theory-building, research, and writing about communication.</p>	<p><b>CST 251</b> (3 CR.)  <b>Stage Lighting and Sound</b>  Provides students with a basic understanding of the principles of stage lighting and sound. Instructs students in the fundamentals of stage lighting such as: functions of lighting, qualities of light, design, basic electricity, lighting instruments and equipment, board operation, and safety. Instructs students in the functions of sound, equipment, design, and sound operation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</p>
<p><b>CST 227</b> (3 CR.)  <b>Business and Professional Communication</b>  Emphasizes principles and practical application to effective professional oral communication behaviors to include speaking, listening, and relating, and rhetorical sensitivity within professional, business, and organizational contexts. Lecture 3 hours per week.</p>	<p><b>CST 253</b> (3 CR.)  <b>Production and Stage Management</b>  Provides students with a working knowledge of theatre management such as theatre organization, budgeting, box office, publicity, house management, and stage management. Offers students an opportunity to work in College theatre productions. Lecture 3 hours per week.</p>
<p><b>CST 229</b> (3 CR.)  <b>Intercultural Communication</b>  Emphasizes the influence of culture on the communication process including differences in values, message systems, and communication rules. Lecture 3 hours per week.</p>	<p><b>CST 267</b> (3 CR.)  <b>Creative Drama</b>  Explores uses of drama through story dramatization, role-playing, and sensory exercises. Lecture 3 hours per week.</p>
<p><b>CST 233–234</b> (4 CR.) (4 CR.)  <b>Rehearsal and Performance I–II</b>  Explores various aspects of the theatre through involvement in College theatre production. Lecture/laboratory 4 hours per week.</p>	<p><b>CST 270</b> (3 CR.)  <b>Film Directing</b>  Introduces theory and practice of film directing. Explores the roles and responsibilities of the director in development, pre-production, production, post-production, distribution and exhibition phases of the filmmaking process for Cinema and other media. Covers mise en scene, how to interpret a script visually and how to work with actors. Lecture 2 hour per week. Studio 2 hours per week. Total 4 hours per week.</p>
<p><b>CST 240</b> (3 CR.)  <b>Basic Set Design</b>  Studies basic techniques and methods of scenic design for the stage. Lecture 3 hours per week.</p>	
<p><b>CST 241–242</b> (3 CR.) (3 CR.)  <b>Introduction to Directing I–II</b>  Prerequisites: CST 131–132 or division approval. Introduces theory and practice of stage direction through the study of directing methods as well as the execution and discussion of directing exercises. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</p>	
<p><b>CST 245</b> (3 CR.)  <b>Basic Lighting</b>  Studies basic techniques and methods of lighting design for the stage. Lecture 3 hours per week.</p>	



Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Computer Aided Drafting

### **CAD 140 (3 CR.)**

#### **Technical Drawing**

Enhances the principles learned that are related to the field of drafting and design. Gives a more in-depth exposure to detail and working drawings, dimensioning, tolerancing, and conventional drafting practices. Teaches CAD modeling, may include parametric modeling. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **CAD 152 (3 CR.)**

#### **Engineering Drawing Fundamentals II**

Prerequisite: EGR 115 or equivalent. Introduces technical drafting from the fundamentals through advanced drafting practices. Includes lettering, geometric construction, technical sketching, orthographic projection, sections, intersections, development, and fasteners. Teaches theory and application of dimensioning and tolerances, pictorial drawing, and preparation of drawings. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

### **CAD 165 (3 CR.)**

#### **Architectural Blueprint Reading**

Emphasizes reading, understanding, and interpreting standard types of architectural drawings, including plans, elevation, sections, and details. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **CAD 175 (2 CR.)**

#### **Schematics and Mechanical Diagrams**

Covers interpretation of basic shop drawings, conventional symbols, common electrical and electronics symbols, wiring diagrams, hydraulic and pneumatic symbols, schematic drawings, and piping diagrams. (Credit will not be awarded for both CAD 175 and DRF 175.) Lecture 2 hours per week.

### **CAD 201 (4 CR.)**

#### **Computer Aided Drafting and Design I**

Corequisite: ARC 121, CAD 165, EGR 115, or division approval. Teaches computer aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

### **CAD 202 (4 CR.)**

#### **Computer Aided Drafting and Design II**

Prerequisite: CAD 201. Teaches working drawings and advanced operations in computer aided drafting. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

### **CAD 203 (3 CR.)**

#### **Computer Aided Drafting and Design III**

Prerequisite: CAD 202. Teaches advanced CAD applications. Includes customization and/or use of advanced software. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **CAD 233 (3 CR.)**

#### **Computer Aided Drafting III**

Prerequisite: CAD 202. Introduces programming skills and exposes the student to geometric modeling. Focuses on proficiency in production drawing using a CAD system. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **CAD 238-239 (3 CR.) (3 CR.)**

#### **Computer Aided Modeling and Rendering I-II**

Prerequisite for CAD 238: CAD 202. Prerequisite for CAD 239: CAD 238. Focuses on training students in the contemporary techniques of 3D modeling, rendering, and animation on the personal computer. Introduces the principles of visualization, sometimes known as photo-realism, which enables the student to create presentation drawings for both architectural and industrial product design. Uses computer animation to produce walk-through that will bring the third dimension to architectural designs. Lecture 3 hours per week.

### **CAD 241 (3 CR.)**

#### **Parametric Solid Modeling I**

Focuses on teaching students the design of parts by parametric solid modeling. Topics covered will include, but are not limited to, sketch profiles; geometric and dimensional constraints; 3D features; model generation by extrusion, revolution, and sweep; and the creation of 2D drawing views that include sections, details, and auxiliary. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **CAD 260 (3 CR.)**

#### **Computer Applications for Surveyors and Technicians**

Studies and evaluates numerous COGO software and their associated drafting packages. Includes calculations and drafting of traverse adjustment, subdivision, and curves. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **CAD 261 (3 CR.)**

#### **Computer Aided Digital Terrain Modeling and Earthworks**

Introduces computer aided design for civil/surveying using digital terrain modeling and extracting earthwork volumes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Computer Science

### **CSC 100 (1 CR.) Introduction to Computer Usage**

Corequisites: CSC 201 and a satisfactory score on the proficiency examination for MTH 263 or equivalent or division approval. Teaches fundamental skills of computer operation and tools for programming, such as editor, compiler, and debugger. Examines hardware (processor, I/O, and memory), and operating systems. Lecture 1 hour per week.

### **CSC 110 (3 CR.) Introduction to Computing**

Introduces problem solving through computer applications and via a programming language. Examines development of computers, social and ethical implications of computers, and properties of programming languages. Covers input, storage, data manipulation, software, and hardware. Lecture 3 hours per week.

### **CSC 130 (3 CR.) Scientific Programming**

Prerequisite: readiness for ENG 111 and readiness for MTH 161/167 or equivalent. Introduces a science-oriented, high-level programming language. Studies the language and its application in problem solving. Lecture 3 hours per week.

### **CSC 185 (1 CR.) Programming Tools**

Prerequisite: Satisfactory placement scores for MTH 161 or MTH 167 or division approval. Corequisite: CSC 130 or CSC 201. Teaches tools for computer programming, such as editors, compilers, and debuggers. Teaches operating systems skills needed by computer science majors. (CSC 185 is an updated version of CSC 100 and required for students taking CSC 201. CSC 185 is not required for students who have already taken CSC 100.) Lecture 1 hour per week.

### **CSC 200 (4 CR.) Introduction to Computer Science**

Prerequisites: placement into ENG 111 and placement into MTH 161 or MTH 167 or equivalent. Provides broad introduction to computer science. Discusses architecture and function of computer hardware, including networks and operating systems, data and instruction representation, and data organization. Covers software, algorithms, programming languages, and software engineering. Discusses artificial intelligence and theory of computation. Includes a hands-on instructional component.

### **CSC 201 (4 CR.) Computer Science I**

Prerequisite: CSC 200 or CSC 130 or a grade of C in MTH 173 or MTH 263. Corequisite: MTH 263 or division approval. Introduces algorithm and problem-solving methods. Emphasizes structured and object-oriented programming concepts, data types, I/O, control structures, functions, data abstraction, objects, elementary data structures, and the study and use of a high-level programming language. Lecture 4 hours per week.

### **CSC 202 (4 CR.) Computer Science II**

Prerequisites: CSC 201 and MTH 263. Corequisite: MTH 264. Examines fundamental data structures and analyzes algorithms. Covers abstract data types and essential data structures such as arrays, stacks, queues, linked lists, and trees; introduces searching and sorting algorithms and algorithm analysis. Lecture 4 hours per week.

### **CSC 205 (3 CR.) Computer Organization**

Prerequisite: CSC 202. Examines the hierarchical structure of computer architecture. Focuses on multi-level machine organization using a simple assembly language. Includes processors, instruction execution, addressing techniques, data representation, and digital logic. Lecture 3 hours per week.

### **CSC 206 (3 CR.) Assembly Language**

Prerequisite: CSC 202 or permission of instructor. Examines assembly language programming. Includes the use of macros, linkers, loaders, assemblers, and interfacing of assembly language with hardware components. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Contracting

### **CON 100 (3 CR.) Shaping Business Arrangements**

Provides an introduction to the environment in which contracts function. Develops professional skills for making business decisions and advising other acquisition team members in successfully meeting customers' needs. Introduces students to the different acquisition contracting areas and the types of procurement alternative that may be selected for each. Presents knowledge of management and information systems as well as recent acquisition initiatives. Lecture 3 hours per week.

**CON 104 (3 CR.)****Federal Acquisition Regulation (FAR) Fundamentals I**

Teaches students Federal Acquisition Regulation (FAR) Fundamentals (Parts 1–53) and the Defense Federal Acquisition Regulation Supplement (DFARS). Introduces the following basic principles of government contracting: basic government contracting by using the FAR and DFARS; and contract acquisition planning. Part I of II. Lecture 3 hours per week.

**CON 105 (3 CR.)****Federal Acquisition Regulation (FAR) Fundamentals II**

Prerequisite: CON 104. Corequisite: CON 100. Teaches students Federal Acquisition Regulation (FAR) Fundamentals (Parts 1–53) and the Defense Federal Acquisition Regulation Supplement (DFARS). Covers contract formation and contract management/administration. Part II of II. Lecture 3 hours per week.

**CON 107 (3 CR.)****Contract Planning**

Corequisite: CON 100. Teaches students the federal strategic acquisition planning processes. Focuses the student on understanding the customer's needs, understanding the customer's mission, understanding the contracting officer's role as the primary business advisor, and developing a strategic acquisition plan that supports the agency's mission. Lecture 3 hours per week.

**CON 110 (3 CR.)****Contract Support Planning**

Teaches contract support planning, which is a phase of the acquisition process where communication between the customer and acquisition professional is imperative. Introduces a process for knowing customers and their requirements from strategic and small business perspectives, supporting customers and providing them with what they need, when they need it, and at a reasonable price. Applies support in the contracting community of practice for information and resources to satisfy this requirement. Lecture 3 hours per week.

**CON 111 (3 CR.)****Contract Strategy Execution**

Teaches the contract strategy execution phase in the acquisition process where initial research and analysis of customers' requirements are put into action. Describes the process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive plan for fulfilling customers' requirements. Lecture 3 hours per week.

**CON 112 (3 CR.)****Contract Performance Assessment**

Provides information and resources necessary to identify and utilize appropriate performance metrics when evaluating contractor performance. Explores processes for working with the customer to ensure contract performance and assessment is satisfying customer's strategic requirements. Discusses assessment strategies and performance remedies, how to make and process contract changes after award, how to handle disputes, and how to close out completed contracts. Lecture 3 hours per week.

**CON 120–121 (3 CR.) (3 CR.)****Strategic Focused Contracting I–II**

Prerequisite for CON 120: CON 100. Prerequisite for CON 121: CON 120. Covers the entire acquisition process from meeting with the customer to completing the contract closeout process. Presents an opportunity to learn and apply leadership, problem-solving, and negotiation skills. Applies the knowledge and skills gained in CON 100 to cover an integrated case study approach. Lecture 3 hours per week.

**CON 124 (3 CR.)****Contract Execution**

Prerequisite: CON 100. Corequisite: CON 107. Teaches students the federal contract execution process. Introduces students to executing acquisition plans through soliciting industry information, executing contract procedures for acquiring commodities, conducting market analysis, determining fair and reasonable prices, and executing the award of a government contract. Lecture 3 hours. Total 3 hours per week.

**CON 127 (3 CR.)****Contract Administration**

Prerequisite: CON 100. Corequisite: CON 107. Covers the fundamentals of federal contract management and administration procedures. Introduces the process of developing and implementing performance assessment strategies, how to make price contract changes after contract award, how to properly address contract disputes, and how to properly close-out contracts. Lecture 3 hours. Total 3 hours per week.

**CON 170 (3 CR.)****Fundamentals of Cost and Price Analysis**

Prerequisite: CON 100. Corequisite: CON 107. Teaches the fundamentals market research process, and analysis of contractor-pricing strategies. Introduces cost-volume-profit analysis, calculation of contribution margin estimates, and the process of developing cost estimating relationships for an effective price analysis pursuant to FAR subpart 15.4. Lecture 3 hours. Total 3 hours per week.

**CON 214 (3 CR.)**

**Business Decisions for Contracting**

Teaches pre-award business and contracting knowledge necessary to process complex procurements. Emphasizes the planning of successful contract support strategies and executing an acquisition that optimizes customer contract performance. Explains the techniques for building successful business relationships, the benefits of strategic sourcing and spend analysis, and details of providing contract financing. Discusses an in-depth look at subcontracting, how to conduct a formal source selection, and how to analyze the information necessary to determine contractor responsibility. Lecture 3 hours per week.

**CON 215 (3 CR.)**

**Intermediate Contracting Support**

Presents a series of case studies where students demonstrate their ability to develop and execute business strategies to meet customer requirements. Develops the techniques for building successful business relationships, the benefits of strategic sourcing and spend analysis, and details of providing contract financing will be incorporated. Presents an in-depth look at subcontracting, how to conduct a formal source selection, and how to analyze the information necessary to determine contractor responsibility and risk. Lecture 3 hours per week.

**CON 216 (3 CR.)**

**Legal Considerations in Contracting**

Teaches the students the legal considerations in the procurement process. Introduces the basic principles and sources of law relative to procurement and fiscal law. Addresses various other legal issues that may develop during the course of a contract including protests, assignment of claims, disputes, fraud, contractor debt, performance issues, and contract termination. Lecture 3 hours per week.

**CON 217 (3 CR.)**

**Cost Analysis and Negotiation Techniques**

Teaches the students the pricing skills, methods, and techniques necessary to analyze a cost proposal. Presents an opportunity to learn and apply leadership, problem-solving, and negotiation skills to develop a government contract negotiation objective. Applies the knowledge and skills gained in this course to cover an integrated case study approach for contract award. Lecture 3 hours per week.

**CON 218 (3 CR.)**

**Advanced Contracting Support**

Presents a series of case studies to teach the students contract administration skills, to demonstrate their ability to negotiate fair and reasonable prices and to consider the legal

implications for various contract situations. Presents an opportunity to learn and apply critical thinking, cost analysis, problem solving, and negotiation skills to the process of contract administration. Applies the knowledge and skills gained in this course to cover an integrated case study approach for contract award. Lecture 3 hours per week.

**CON 237 (3 CR.)**

**Simplified Acquisition Procedures**

Prerequisite: CON 100. Teaches use of Simplified Acquisition Procedures (SAPs) utilizing Federal Acquisition Regulations (FAR), Parts 12 and 13. Covers procedures for planning a solicitation, evaluating quotes, and selecting a contractor for award. Lecture 3 hours per week.

## Dental Assisting

Enrollment in DNA courses is restricted to students program-placed in the Dental Assisting Program.

**DNA 100 (1 CR.)**

**Introduction to Oral Health Professions**

Provides an introduction to the oral health profession and covers basic terminology, historical perspective, the credentialing process, accreditation, professional organizations, and legal and ethical considerations. Lecture 1 hour per week.

**DNA 108 (3 CR.)**

**Dental Science**

Studies head and neck anatomy, tooth morphology, pathological conditions of the oral cavity, disease processes, and microbiology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**DNA 110 (3 CR.)**

**Dental Materials**

Studies principles of management of disease producing microorganisms and associated diseases. Emphasis is placed on sterilization, asepsis, and disinfection techniques applicable in the dental office. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**DNA 113 (3 CR.)**

**Chairside Assisting I**

Provides instruction on the principles of clinical chairside dental assisting, dental equipment use and maintenance, safety, instrument identification, tray set-ups by procedures, and patient data collection. Emphasis on patient management during restorative procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**DNA 114** (4 CR.)  
**Chairside Assisting II**

Introduces the student to the various dental specialties including oral surgery, orthodontics, periodontic, prosthodontics, endodontics, and pediatric dentistry. Integrates and applies previous course content to operative dental procedures. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

**DNA 119** (1 CR.)  
**Dental Therapeutics**

Exposes students to concepts and terminology related to pharmacology, pain control, and dental medicinal agents. Emphasis is placed on the use of materials in patient treatment. Lecture 1 hour per week.

**DNA 120** (1 CR.)  
**Community Health**

Studies topics related to community health issues including identification of specific diseases, symptoms, causes, and effects. An emphasis is placed on the promotion of oral health in the community through patient education in oral home care techniques, dietary counseling, plaque control procedures, and application of medicinal agents. Lecture 1 hour per week.

**DNA 130** (2 CR.)  
**Dental Office Management**

Exposes students to and provides practical experience in the legal aspects of dental office management with regard to ethics, jurisprudence, appointment control, recall systems, reception techniques, telephone techniques, accounts receivable and payable, payroll, insurance claims, inventory control, and professional conduct in a dental office. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**DNA 134** (3 CR.)  
**Dental Radiology and Practicum**

Teaches the physics of dental radiation and safety, equipment operation, cone placement for the parallel and bisection techniques, panoramic exposures, mounting, and film processing. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**DNA 140** (5 CR.)  
**Externship**

Exposes students to the fast pace of a dental practice while they perform support services with an established team. Lecture 1 hour. Laboratory 12 hours. Total 13 hours per week.

## Dental Hygiene

Enrollment in DNH courses is restricted to students program-placed in the Dental Hygiene Program.

**DNH 111** (2 CR.)  
**Oral Anatomy**

Studies the morphology and function of the oral structures with emphasis on the primary and permanent dentition, eruption sequence, occlusion, and intra-arch relationships. Lecture 2 hours per week.

**DNH 115** (3 CR.)  
**Histology/Head and Neck Anatomy**

Presents a study of the microscopic and macroscopic anatomy and physiology of the head, neck, and oral tissues. Includes embryologic development and histologic components of the head, neck, teeth, and periodontium. Lecture 3 hours per week.

**DNH 120** (2 CR.)  
**Management of Emergencies**

Studies the various medical emergencies and techniques for managing emergencies in the dental setting. Additional practical applications and simulations of emergencies may be conducted to enhance basic knowledge from the lecture component. Lecture 2 hours per week.

**DNH 130** (3 CR.)  
**Oral Radiography for the Dental Hygienist**

Studies radiation physics, biology, safety, and exposure techniques for intra- and extra-oral radiographic surveys. Laboratory provides practice in exposure, processing methods, mounting, and interpretation of normal findings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**DNH 141** (5 CR.)  
**Dental Hygiene I**

Introduces clinical knowledge and skills for the performance of dental hygiene services that include basic skill components, lab mannequins, and patient practice. Lecture 3 hours. Clinic 6 hours. Total 9 hours per week.

**DNH 142** (5 CR.)  
**Dental Hygiene II**

Prerequisite: DNH 141. Exposes students to instrument sharpening, time management, and patient education techniques and methods. Provides supervised clinical practice in the dental hygiene clinic with emphasis on developing patient treatment and instrument skills. Introduces the student to dental assisting skills. Lecture 2 hours. Clinic 9 hours. Total 11 hours per week.



- DNH 143 (4 CR.) Dental Hygiene III**  
Introduces dental healthcare for patients with special needs. Includes introduction to computer concepts and applications. Provides supervised clinical practice in the dental hygiene clinic with emphasis on refining patient treatment and instrumentation skills, including oral radiographs. Lecture 2 hours. Clinic 6 hours. Total 8 hours per week.
- DNH 145 (2 CR.) General and Oral Pathology**  
Introduces general pathology with consideration of the common diseases affecting the human body. Particular emphasis is given to the study of pathological conditions of the mouth, teeth, and their supporting structures. Lecture 2 hours per week.
- DNH 146 (2 CR.) Periodontics for the Dental Hygienist**  
Introduces the theoretical and practical study of various concepts and methods used in describing, preventing, and controlling periodontal disease. Presents etiology, microbiology, diagnosis, treatment, and prognosis of diseases. Lecture 2 hours per week.
- DNH 150 (2 CR.) Nutrition**  
Studies nutrition as it relates to dentistry and general health. Emphasizes the principles of nutrition as applied to the clinical practice of dental hygiene. Lecture 2 hours per week.
- DNH 214 (2 CR.) Practical Materials for Dental Hygiene**  
Studies the current technologic advances, expanded functions, and clinical/laboratory materials used in dental hygiene practice. Provides laboratory experience for developing skills in the utilization and applications of these technologies and functions. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.
- DNH 216 (2 CR.) Pharmacology**  
Studies the chemical and therapeutic agents used in dentistry, including their preparation, effectiveness, and specific application. Lecture 2 hours per week.
- DNH 226 (2 CR.) Public Health Dental Hygiene I**  
Studies and compares concepts of delivery of healthcare, applying the public health delivery model. Utilizes epidemiologic methods, research, and biostatistics as applied to oral health program planning, implementation, and evaluation. Incorporates and applies current health issues and trends. Lecture 2 hours per week.
- DNH 227 (1 CR.) Public Health Dental Hygiene II**  
Prerequisite: DNH 226. Applies concepts of public health program planning through student-directed community projects with an emphasis on preventative oral health education. Includes development of table clinics, bulletin boards, and volunteer service in the community. Laboratory 3 hours per week.
- DNH 230 (1 CR.) Office Practice and Ethics**  
Studies the principles of dental ethics and economics as they relate to the dental hygienist. The course also includes a study of jurisprudence and office procedures. Lecture 1 hour per week.
- DNH 235 (2 CR.) Management of Dental Pain and Anxiety in the Dental Office**  
Provides a study of anxiety and pain management techniques used in dental care. Students will understand the necessary theory to appropriately treat, plan, and successfully administer topical anesthesia, local anesthesia, and nitrous oxide/oxygen analgesia. Includes the components of pain, pain control mechanisms, topical anesthesia, local anesthesia, and nitrous oxide/oxygen analgesia. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.
- DNH 244 (5 CR.) Dental Hygiene IV**  
Prerequisite: DNH 143. Introduces advanced skills and the dental hygienist's role in dental specialties. Includes supervised clinical practice in the dental hygiene clinic and/or off-campus clinical rotations at various community facilities. Emphasizes treatment of patients demonstrating periodontal involvement, stressing application and correlation of knowledge and skills from previous semesters. Lecture 1 hour. Clinic 12 hours. Total 13 hours per week.
- DNH 245 (5 CR.) Dental Hygiene V**  
Prerequisite: DNH 244. Exposes student to current advances in dentistry. Includes supervised clinical practice in the dental hygiene clinic and/or off-campus clinical rotations at various community facilities. Emphasis is placed on synthesis of knowledge from previous semesters, treatment of patients with moderate to advanced periodontal involvement, and improving clinical speed while maintaining quality in preparation for practice. Lecture 1 hour. Clinic 12 hours. Total 13 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Diagnostic Medical Sonography

Enrollment in DMS courses (except DMS 100) is restricted to students program-placed in the Diagnostic Medical Sonography Program.

### **DMS 100 (1 CR.) Orientation to the Sonography Profession**

Presents a brief history of the sonography profession, code of ethics, scope of practice, and technical standards. Lecture 1 hour per week.

### **DMS 150 (4 CR.) Echocardiography I**

Presents the fundamentals of adult echocardiography, including basic ultrasound scanning techniques of the heart. Students focus on anatomy, pathophysiology, and echocardiographic pattern recognition with real-time 2D, 3D, and 4D imaging, and Doppler and M-mode echocardiography. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **DMS 160 (4 CR.) Vascular Sonography I**

Presents the fundamentals of vascular technology including basic ultrasound scanning techniques of the peripheral vascular and abdominal vascular systems. Students focus on anatomy, physiology,

pathology, and vascular recognition with real-time 2D and Doppler imaging. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **DMS 206 (2 CR.) Introduction to Sonography**

Introduces the diagnostic foundations of diagnostic medical sonography, including terminology, scan plane orientations, anatomical relationships, departmental administrative operations, hospital organization, and basic patient care principles. Lecture 2 hours per week.

### **DMS 207 (2 CR.) Sectional Anatomy**

Teaches normal sectional anatomy in the transverse, longitudinal, and coronal planes, with correlated sonographic images. Emphasis will be placed on abdominopelvic organs and vasculature. Lecture 2 hours per week.

### **DMS 208 (2 CR.) Ultrasound Physics and Instrumentation I**

Discusses and solves mathematical problems associated with human tissue, basic instrumentation, and scanning technology. Lecture 2 hours per week.

### **DMS 209 (2 CR.) Ultrasound Physics and Instrumentation II**

Prerequisite: DMS 208. Focuses on the areas of ultrasonic, instrumentation, image artifacts, biologic effects, quality control, as well as Doppler principles and applications, and basic types of equipment through lecture and laboratory exercises. Lecture 2 hours per week.

### **DMS 211 (4 CR.) Abdominal Sonography**

Examines the clinical applications within the specialty of abdominal sonography including interpretation of normal and abnormal sonographic patterns, pathology, related clinical signs and symptoms, normal variants, and clinical laboratory tests. Includes laboratory sessions on basic scanning techniques and protocols. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **DMS 212 (3 CR.) Obstetrical and Gynecological Sonography**

Corequisite: DMS 211. Presents the clinical applications within the sonographic specialties of obstetrics and gynecology. Includes topics of discussion on normal and abnormal sonographic patterns, related clinical symptoms, and associated laboratory tests. Includes laboratory sessions on basic scanning techniques. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **DMS 217 (1 CR.) Sectional Anatomy Laboratory**

Provides experience with sectional anatomy. Laboratory 2 hours per week.

### **DMS 218 (1 CR.) Ultrasound Physics and Instrumental Laboratory I**

Presents practice with basic instrumentation, mathematical calculations, and basic properties of acoustical physics. Laboratory 2 hours per week.

### **DMS 219 (1 CR.) Ultrasound Physics and Instrumental Laboratory II**

Presents advanced practice with instrumentation, hemodynamics, Doppler instrumentation, and pulse-echo technology. Laboratory 2 hours per week.

### **DMS 222 (2 CR.) Sonography Registry Review**

Reviews material covered throughout the Sonography Program to prepare the student for the ultrasound registry examination. Lecture 2 hours per week.

- DMS 231 (3 CR.) Clinical Education I**  
 Develops students' ultrasonic skills in a diagnostic environment; may include on-campus labs and private office settings, as well as hospital rotations. May include experiences in abdominal, pelvic, obstetrical, and small parts scanning, as well as echocardiography and vascular sonography. Laboratory 9 hours per week.
- DMS 232 (4 CR.) Clinical Education II**  
 Prerequisite: DMS 231. Develops students' ultrasonic skills in a diagnostic environment; may include on-campus labs and private office settings, as well as hospital rotations. May include experiences in abdominal, pelvic, obstetrical, and small parts scanning, as well as echocardiography and vascular sonography. Laboratory 20 hours per week.
- DMS 240 (3 CR.) Echocardiography Sectional Anatomy**  
 An introduction to ultrasound sectional anatomy of the heart and great vessels. Anatomy will be presented in the transverse and sagittal planes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
- DMS 241 (3 CR.) Advanced Abdominal Sonography**  
 Presents advanced study of abdominal sonography with concentration on case study reviews of normal anatomy, physiology, and pathophysiology, including abnormal etiology and diagnostic techniques. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- DMS 242 (3 CR.) Advanced Obstetrical and Gynecological Sonography**  
 Prerequisite: DMS 212. Presents advanced study of obstetrics/gynecology with concentration on case study reviews of normal anatomy, physiology, and fetal development, including abnormal etiology and diagnostic techniques. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- DMS 243 (1 CR.) Breast Sonography**  
 Presents the fundamentals of breast sonography, including case study review of normal anatomy, physiology, and pathological conditions of breast tissue and its visualization with real-time 2D and 3D imaging, and Doppler. Lecture 1 hour per week.
- DMS 245 (3 CR.) Vascular Ultrasound Sectional Anatomy**  
 Presents ultrasound sectional anatomy of the peripheral vascular, cerebrovascular, and abdominal vascular systems. Anatomy will be presented in the transverse, sagittal, and coronal planes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
- DMS 250 (4 CR.) Echocardiography II**  
 Presents advanced study of echocardiography with concentration on case study reviews of normal anatomy, physiology, and pathologic conditions of the adult heart. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- DMS 255 (2 CR.) Echocardiography Registry Review**  
 Presents students with registry examination preparation, test-taking strategies, and skills that will facilitate the graduate's entry into the career of sonography. Lecture 2 hours per week.
- DMS 256 (1 CR.) Echocardiography Case Study Review**  
 Presents weekly echocardiography case studies by faculty and students for interpretation and pattern recognition. Lecture 1 hour per week.
- DMS 260 (4 CR.) Vascular Sonography II**  
 Presents the fundamentals of vascular technology including basic ultrasound scanning techniques of the cerebrovascular system. Students focus on anatomy, physiology, pathology, and vascular recognition with real-time 2D and Doppler imaging. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- DMS 265 (1 CR.) Vascular Case Study Review**  
 Presents weekly vascular case studies by faculty and students for interpretation and pattern recognition. Lecture 1 hour per week.
- DMS 266 (2 CR.) Vascular Ultrasound Registry Review**  
 Presents students with registry examination preparation, test-taking strategies, and skills that will facilitate the graduate's entry into the career of sonography. Lecture 2 hours per week.

## Diesel

### **DSL 111 (2 CR.)**

#### **Introduction to Diesel Engine**

Studies the modern diesel engine, including its fuel, cooling, induction, and exhaust systems. Covers construction, fabrication, maintenance, tune-up, and minor repair and adjustment. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

### **DSL 123 (2 CR.)**

#### **Diesel Engine Systems I**

Studies basic operational theory of the two- and four-stroke cycle diesel engine used in public transportation vehicles. Covers the construction and function of the diesel engine and the major components as they relate to air, exhaust, and fuel systems. Emphasizes diesel engine tune-up and troubleshooting theory. Lecture 2 hours per week.

### **DSL 141 (2 CR.)**

#### **Transportation Electrical Systems I**

Studies basic operational theory of electrical systems used in public transportation vehicles. Covers electrical symbols, schematics, and troubleshooting procedures, as well as the function, construction, and operation of the electrical system and its components. Lecture 2 hours per week.

### **DSL 143 (4 CR.)**

#### **Diesel Truck Electrical Systems**

Prerequisite: DSL 141 or instructor approval. Studies the theory and operation of various truck and tractor electrical systems. Covers preheating, starting, generating, and lighting systems. Uses modern test equipment for measurement, adjustment, and troubleshooting. Lecture 2 hours per week. Laboratory 4 hours per week. Total 6 hours per week.

### **DSL 150 (3 CR.)**

#### **Mobile Hydraulics and Pneumatics**

Introduces the theory, operation, and maintenance of hydraulic/pneumatic systems and devices used in mobile applications. Emphasizes the properties of fluid, fluid flow, fluid states, and application of Bernoulli's equation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **DSL 152 (4 CR.)**

#### **Diesel Power Trains, Chassis, and Suspension**

Studies the chassis, suspension, steering, and brake systems found on medium and heavy-duty diesel trucks. Covers construction features, operating principles, and service procedures for power train components such as clutches, multi-speed transmissions, propeller shafts, and rear axles. Teaches operations of modern equipment to correct

and adjust abnormalities. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

### **DSL 153 (3 CR.)**

#### **Power Trains I**

Focuses on manual, hydrostatic, and heavy-duty automatic transmissions. Examines various types of power trains and their components, such as multidisc clutch, multi-speed transmissions, torques, drive lines, and differentials. Includes disassembly and assembly of various components. Part I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **DSL 155 (3 CR.)**

#### **Heavy Duty Suspension and Service**

Examines suspensions used on heavy-duty trucks and teaches preventative maintenance and service procedures. Includes nomenclature, theory of operation and services, and repair of heavy-duty truck suspension systems including tires and wheels and steering gear and connecting linkage. Provides opportunity for preventative maintenance inspections and service procedures on heavy-duty vehicles. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **DSL 160 (3 CR.)**

#### **Air Brake Systems**

Studies the basic operational theory of pneumatic and air brake systems as used in heavy-duty and public transportation vehicles. Covers various air control valves, test system components, and advanced air system schematics. Teaches proper service and preventative maintenance of systems. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

## Dietetics

### **DIT 121 (3 CR.)**

#### **Nutrition I**

Studies food composition, dietary guidelines, and nutrients essential to healthy human life. Analyzes nutrient function and metabolism. Lecture 3 hours per week.

### **DIT 122 (3 CR.)**

#### **Nutrition II**

Prior basic nutrition course is recommended. Applies the principles from DIT 121 to the life cycle. Includes current topics such as fad diets, preventive nutrition, weight control, and exercise. Lecture 3 hours per week.

**DIT 125 (3 CR.)****Current Concepts in Diet and Nutrition**

Studies the importance of diet to health and well-being in daily life. Addresses current controversies over food practices and information, food facts and fiction, fad diets, vegetarianism, diet and heart disease, and sound guidelines for maintaining good health with wise food choices. Applies computer technology for nutritional analysis. Intended especially for the non-Dietetics major. Lecture 3 hours per week.

**DIT 221 (4 CR.)****Therapeutic Nutrition**

Prerequisites: DIT 121, DIT 122, or approval of instructor. Applies nutrition principles to the treatment of persons with special dietary needs. Lecture 4 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Drafting

See Computer Aided Drafting (CAD).

## Economics

**ECO 110 (3 CR.)****Consumer Economics**

Fosters understanding of American economic system and the individual's role as a consumer. Emphasizes application of economic principles to practical problems encountered. Alerts students to opportunities, dangers, and alternatives of consumers. Lecture 3 hours per week.

**ECO 120 (3 CR.)****Survey of Economics**

Presents a broad overview of economic theory, history, development, and application. Introduces terms, definitions, policies, and philosophies of market economies. Provides some comparison with other economic systems. Includes some degree of exposure to microeconomic and macroeconomic concepts. Lecture 3 hours per week.

**ECO 201 (3 CR.)****Principles of Macroeconomics**

Introduces macroeconomics including the study of Keynesian, classical, monetarist principles and theories, the study of national economic growth, inflation, recession, unemployment, financial markets, money and banking, the role of government spending and taxation, along with international trade and investments. Lecture 3 hours per week.

**ECO 202 (3 CR.)****Principles of Microeconomics**

Introduces the basic concepts of microeconomics. Explores the free market concepts with coverage of economic models and graphs, scarcity and choices, supply and demand, elasticities, marginal benefits and costs, profits, and production and distribution. Lecture 3 hours per week.

**ECO 210 (3 CR.)****International Economics**

Analyzes the nature, performance, and problems of market and non-market economic systems with emphasis on post-World War II experience. Lecture 3 hours per week.

**ECO 230 (3 CR.)****Money and Banking**

Reviews history of American banking institutions, principles, and practices. Emphasizes the relationship of finances to business structure, operation, and organization. Examines present financial structures, agents, problems, and institutions. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Education

**EDU 114 (3 CR.)****Driver Task Analysis**

Prerequisite: Successful completion of ENF 1 or ENF 2, under the Virginia Placement Test, or ESL 51. Introduces the "driver task" as related to the highway transportation system and factors that influence performance ability. Prepares students so they may be eligible to take certification exams for driving school instructors in both public and private schools. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EDU 200 (3 CR.)****Introduction to Teaching as a Profession**

No prerequisites. However, depending upon the program in which the student is enrolled (i.e., "Career Switcher" vs. VCCS Teacher Preparation AAS), the student may need to have achieved a satisfactory score on Praxis CORE and Praxis II. Provides an orientation to the teaching profession in Virginia, including historical perspectives, current issues, and future trends in education on the national and state levels. Emphasizes information about teacher licensure examinations, steps to certification, teacher preparation and induction programs, and attention to critical shortage areas in Virginia. Includes



supervised field placement (recommended: 40 clock hours) in a K-12 school. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EDU 214 (3 CR.)  
Instructional Principles of Driver Education**

Prerequisite: EDU 114. Analyzes rules and regulations that govern the conduct of Driver Education Programs with special emphasis on organization and administration. Includes uses in the classroom, driving range, and on the street. Prepares students so they may be eligible to take the state certification exam in driver education. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EDU 225 (3 CR.)  
Audiovisual Materials and Computer Software**

Prepares students to construct graphic teaching aids, to select and develop materials for instructional support, and to operate, maintain, and use audiovisual equipment used in the classroom. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EDU 235 (3 CR.)  
Health, Safety, and Nutrition Education**

Focuses on the health and developmental needs of children and the methods by which these needs are met. Emphasizes positive health, hygiene, nutrition, and feeding routines, childhood diseases, and safety issues. Emphasizes supporting the mental and physical well-being of children, as well as procedures for reporting child abuse. Lecture 3 hours per week.

**EDU 254 (3 CR.)  
Teaching Basic Academic Skills to Exceptional Children**

Prerequisite: successful completion of 24 hours of college courses preferably including ITE 115 and ENG 111 or equivalent. Develops competencies required to teach readiness and basic skills to children with special needs in private or public school settings. Includes the preparation of lesson plans, instructional units, and Individualized Education Programs (IEP's). Includes child abuse recognition and intervention training. Emphasizes exceptionalities for students ages 2–21 under Public Law 94–142. Familiarizes students with the indicators of effective teaching. Lecture 3 hours per week.

**EDU 270 (3 CR.)  
Introduction to Autism Spectrum Disorders**

Prerequisite: Successful completion of 24 hours of college coursework preferably including ITE 115 and ENG 111 or equivalent. Explores the nature of autism and related developmental disorders. Details and discusses current evaluation and assessment measures in ASD. Discusses current intervention strategies and their implementation in the school setting. Part I of III. Lecture 3 hours per week.

**EDU 280 (3 CR.)  
Technology Standards for Teachers**

Prerequisite: ITE 115 or instructor's approval. Provides K-12 classroom teachers with the knowledge and skills needed to fulfill the Commonwealth of Virginia's Technology Standards for Instructional Personnel. Certification is dependent upon the supervisor's or employer's approval. Lecture 3 hours per week.

**EDU 285 (3 CR.)  
Teaching Online Program (TOP)**

Prerequisite: proficient working knowledge of the current VCCS online course delivery system. Instructs educators in the method and practice for delivery of online course content. Includes instructional technology and instructional design theory and practice, with skills and strategies that educators will use to engage students and create a collaborative online environment. Lecture 3 hours per week.

**EDU 287 (3 CR.)  
Instructional Design for Online Learning**

Prepares educators to design online courses that encourage active learning and student participation. Focuses on instructional design practices including the development of content tied to learning objectives and a peer-based approach to evaluating courses. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Electrical Technology

**ELE 146 (4 CR.)  
Electric Motor Control**

Prerequisite: ELE 150 or equivalent. Studies solid state devices with application and emphasis toward control of power. Includes diodes, SCR's, photoelectric controls, timing, circuits, voltage regulation and three phase rectifiers. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ELE 148 (3 CR.)  
Power Distribution Systems**

Introduces transmission and distribution of electrical power. Includes application of transformers, distribution and over-current protection devices, substations, switchboards, feeders, bus-ways, motor control centers, generators, motors, and troubleshooting techniques associated with these systems and devices. Lecture 2 hours. Lab 2 hours. Total 4 hours per week.

**ELE 150 (3 CR.)  
A.C. and D.C. Circuit Fundamentals**

Provides an intensive study of the fundamentals of direct and alternating current, resistance, magnetism, inductance and capacitance, with emphasis on practical applications. Focuses on electrical/machines applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ELE 189 (3 CR.)  
Data Cabling Communication**

Introduces construction, testing, troubleshooting, and repair of a variety of copper cables. Prepares students for the Electronics Technician Association Data Cable Installer Certification (DCIC) necessary to compete for entry-level positions in a wide range of networking, security and video companies. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ELE 211 (3 CR.)  
Electrical Machines I**

Studies the construction, theory of operations and applications of DC and AC machines. Prerequisite: ETR 114 or equivalent. Part I of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ELE 233 (3 CR.)  
Programmable Logic Controller Systems I**

Teaches operating and programming of programmable logic controllers. Covers analog and digital interfacing and communication schemes as they apply to system. Part I of II. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ELE 250 (3 CR.)  
Fiber Optic Technology**

Introduces testing, troubleshooting, and repair of fiber optic systems. Prepares students for the Electronics Technician Association Fiber Optics Technician (FOT) certification necessary to compete for technician level positions in a wide range of networking, security and video companies. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Emergency Medical Services

Enrollment in EMS courses (except EMS 111 and EMS 120) is restricted to students program-placed in Emergency Medical Services Programs.

**EMS 100 (1 CR.)  
CPR for Healthcare Providers**

Provides instruction in Cardiopulmonary Resuscitation that meets current Emergency Cardiac Care (ECC) guidelines for Cardiopulmonary Resuscitation education for healthcare providers. Equivalent to HLT 105. Lecture 1 hour per week.

**EMS 105 (1 CR.)  
Basic Medication Administration Procedures**

Covers basic theory and practical application of medication and drug dosage, as well as calculations. Direct application to the functional performance of the EMT-Intermediate in the field and clinical settings is stressed. Lecture 1 hour per week.

**EMS 111 (7 CR.)  
Emergency Medical Technician: Basic**

Prerequisite: EMS 100 or CPR certification at the Healthcare Provider level. Corequisite: EMS 120. Prepares student for certification as a Virginia and National Registry EMT. Includes all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medical Technician Basic. Lecture 5 hours. Laboratory 4 hours. Total 9 hours per week.

**EMS 112 (4 CR.)  
Emergency Medical Technician: Basic I**

Prerequisite: EMS 100 or CPR certification at the Healthcare Provider level. Corequisite: EMS 120. Prepares student for certification as a Virginia and/or National Registry EMT–Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medical Technician Basic. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**EMS 115 (2 CR.)  
Emergency Medical Technician: Basic Refresher**

Provides 36 clock hours of instruction to meet Virginia Office of EMS requirements for recertification at the EMT–Basic level. May be repeated as needed. Lecture 2 hours per week.

**EMS 120 (1 CR.)****Emergency Medical Technician:  
Basic Clinical**

Observes in a program-approved clinical/field setting. Includes topics for both EMS 111 and EMS 112, dependent upon the program in which the student is participating and is a corequisite to both EMS 111 and EMS 112. Laboratory 2 hours per week.

**EMS 151 (4 CR.)****Introduction to Advanced Life Support**

Corequisite: EMS 170. Prepares the student for Virginia Enhanced certification eligibility and begins the sequence for National Registry Intermediate and/or Paramedic Certification. Includes the theory and application of the following: foundations, human systems, pharmacology, overview of shock, venous access, airway management, patient assessment, respiratory emergencies, allergic reaction, and assessment-based management. Conforms at a minimum to the Virginia Office of Emergency Medical Services curriculum. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**EMS 153 (2 CR.)****Basic ECG Recognition**

Focuses on the interpretation of basic electrocardiograms (ECG) and their significance. Includes an overview of anatomy and physiology of the cardiovascular system including structure, function, and electrical conduction in the heart. Covers advanced concepts that build on the knowledge and skills of basic dysrhythmia determination and introduction to 12-lead ECG. Lecture 2 hours per week.

**EMS 155 (4 CR.)****ALS: Medical Care**

Prerequisites: Current EMT-B certification, EMS 151, and EMS 153. Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Includes ALS pharmacology, drug and fluid administration with emphasis on patient assessment, differential diagnosis, and management of multiple medical complaints. Includes, but not limited to conditions relating to cardiac, diabetic, neurological, non-traumatic abdominal pain, environmental, behavioral, gynecology, and toxicological disease conditions. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**EMS 157 (3 CR.)****ALS: Trauma Care**

Prerequisites: Current EMT-B certification and EMS 151. Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Utilizes techniques which will allow the student to utilize the assessment findings to formulate a field impression and implement the treatment plan for the trauma patient. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EMS 159 (3 CR.)****ALS: Special Populations**

Prerequisites: EMS 151 and EMS 153. Pre- or corequisite: EMS 155. Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Focuses on the assessment and management of specialty patients including obstetrical, neonates, pediatric, and geriatrics. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EMS 161 (1 CR.)****Basic Trauma Life Support (BTLS)**

Prerequisite: current certification/licensure as an EMS provider or other allied healthcare provider. Offers instruction for students in current topics of care for trauma patients and offers certification as a Basic Trauma Life Support Provider (BTLS) as defined by the American College of Emergency Physicians. Lecture 1 hour per week.

**EMS 162 (1 CR.)****Pediatric Basic Trauma Life Support (PBTLS)**

Prerequisite: current certification/licensure as an EMS provider or other allied healthcare provider. Offers instruction for students in current topics of care for trauma patients and offers certifications in Pediatric Basic Trauma Life Support Provider (PBTLS) as defined by the American College of Emergency Physicians. Lecture 1 hour per week.

**EMS 165 (1 CR.)****Advanced Cardiac Life Support (ACLS)**

Prerequisite: EMS 100, EMS 153, or equivalent. Prepares for certification as an Advanced Cardiac Life provider. Follows course as defined by the American Heart Association. Lecture 1 hour per week.

**EMS 169 (1 CR.)****Pediatric Advanced Life Support (PALS)**

Prepares the student for certification as a Pediatric Advanced Life Support provider as defined by the American Heart Association. Covers primary assessment and emergency care of infants and children. Lecture 1 hour per week.

<p><b>EMS 170</b> <b>ALS Internship I</b> Corequisite: EMS 151. Begins the first in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the emergency department, critical care units, pediatric, labor and delivery, operating room, trauma centers, and various advanced life support units. Laboratory 3 hours per week.</p>	<p><b>(1 CR.)</b></p>	<p><b>EMS 209</b> <b>Advanced Pharmacology</b> HLT 250 plus EMS 213 are equivalent to EMS 209. Students cannot receive credit for both this sequence and EMS 209. Focuses on the principles of pharmacokinetics, pharmacodynamics, and drug administration. Includes drug legislation, techniques of medication administration, and principles of math calculations. Emphasizes drugs used to manage respiratory, cardiac, neurological, gastrointestinal, fluid and electrolyte, and endocrine disorders. Includes classification, mechanism of action, indications, contra-indications, precautions, and patient education. Incorporates principles related to substance abuse and hazardous materials. Applies principles during the assessment and management of trauma, medical, and specialty patients in a laboratory environment. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.</p>	<p><b>(4 CR.)</b></p>
<p><b>EMS 172</b> <b>ALS Clinical Internship II</b> Continues with the second in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the emergency department, critical care units, pediatric, labor and delivery, operating room, and trauma centers. Laboratory 6 hours per week.</p>	<p><b>(2 CR.)</b></p>		
<p><b>EMS 173</b> <b>ALS Field Internship II</b> Continues with the second in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Laboratory 3 hours per week.</p>	<p><b>(1 CR.)</b></p>		
<p><b>EMS 201</b> <b>EMS Professional Development</b> Prepares students for Paramedic Certification at the National Registry Level by fulfilling community activism, personal wellness, resource management, ethical considerations in leadership, and research objectives in the Virginia Office of Emergency Medical Services Paramedic curriculum. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>	<p><b>EMS 211</b> <b>Operations</b> Prepares the student in the theory and application of the following: medical incident command, rescue awareness and operations, hazardous materials incidents, and crime scene awareness. (Conforms to the current Virginia Office of Emergency Medical Services curriculum for EMT–Paramedics.) Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.</p>	<p><b>(2 CR.)</b></p>
<p><b>EMS 205</b> <b>Advanced Pathophysiology</b> Focuses on the pathological processes of disease with emphasis on the anatomical and physiological alterations of the human body by systems. Includes diagnosis and management appropriate to the advanced healthcare provider in and out of the hospital environment. Lecture 4 hours per week.</p>	<p><b>(4 CR.)</b></p>	<p><b>EMS 213</b> <b>ALS Skills Development</b> Utilizes reinforcement and remediation of additional advanced life support skills, as needed. Laboratory 2 hours per week.</p>	<p><b>(1 CR.)</b></p>
<p><b>EMS 207</b> <b>Advanced Patient Assessment</b> Focuses on the principles of normal and abnormal physical exam. Emphasizes the analysis and interpretation of physiological data to assist in patient assessment and management. Applies principles during the assessment and management of trauma, medical, and specialty patients in a laboratory environment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</p>	<p><b>(3 CR.)</b></p>	<p><b>EMS 215</b> <b>Registry Review</b> Reviews material covered in the intermediate/paramedic program. Prepares the student for National Registry testing. Lecture 1 hour per week.</p>	<p><b>(1 CR.)</b></p>
		<p><b>EMS 216</b> <b>Paramedic Review</b> Provides the student with intensive review for the practical and written portions of the National Registry Paramedic exam. This course may be retaken once for credit. Lecture 1 hour per week.</p>	<p><b>(1 CR.)</b></p>
		<p><b>EMS 242</b> <b>ALS Clinical Internship III</b> Continues with the third in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the emergency department, critical care units, pediatric, labor and delivery, operating room, trauma centers, and various advanced life support units. Laboratory 3 hours per week.</p>	<p><b>(1 CR.)</b></p>

**EMS 243 (1 CR.)****ALS Field Internship III**

Continues with the third in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Laboratory 3 hours per week.

**EMS 244 (2 CR.)****ALS Clinical Internship IV**

The fourth in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the emergency department, critical care units, pediatric, labor and delivery, operating room, and trauma centers. May be repeated as needed. Laboratory 6 hours per week.

**EMS 245 (1 CR.)****ALS Field Internship IV**

Continues with the fourth in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. May be repeated as needed. Laboratory 3 hours per week.

## Engineering

**EGR 115 (2 CR.)****Engineering Graphics**

Applies principles of orthographic projection and multi-view drawings. Teaches descriptive geometry including relationships of points, lines, planes, and solids. Introduces sectioning, dimensioning, and computer graphic techniques. Includes instruction in computer aided drafting. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**EGR 120 (2 CR.)****Introduction to Engineering**

Prerequisite: MTH 162, MTH 167, or testing into MTH 263. Corequisite: ENG 111. Introduces the engineering profession, professional concepts, ethics, and responsibility. Reviews hand calculators, number systems, and unit conversions. Introduces the personal computer, operating systems, and processing; engineering problem solving; and graphic techniques. Lecture 2 hours per week.

**EGR 126 (3 CR.)****Computer Programming for Engineers**

Prerequisites: MTH 263 and EGR 120. Introduces computers, their architecture and software. Teaches program development using flowcharts. Solves engineering problems involving programming in languages such as FORTRAN, Pascal, or C++. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EGR 130 (5 CR.)****Statics and Strength of Materials for Engineering Technology**

Prerequisites: MTH 161 and MTH 162, or MTH 167 or equivalent. Presents principles and applications of free-body diagrams of force systems in equilibrium. Analyzes frames and trusses. Presents principles and applications to problems in friction, centroids, and moments of inertia. Includes properties of materials, stress, strain, elasticity, design of connections, shear and bending in statically determinate beams, and axially loaded columns. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

**EGR 206 (2 CR.)****Engineering Economy**

Presents economic analysis of engineering alternatives. Studies economic and cost concepts, calculation of economic equivalence, comparison of alternatives, replacement economy, economic optimization in design and operation, depreciation, and after tax analysis. Lecture 2 hours per week.

**EGR 240 (3 CR.)****Solid Mechanics (Statics)**

Prerequisites: EGR 120, MTH 263, and PHY 231. Covers basic concepts of mechanics, systems of forces and couples, equilibrium of particles and rigid bodies, and internal forces and analysis of structures. Also includes trusses, frames, machines and beams, distributed forces, friction, centroids, and moments of inertia. Lecture 3 hours per week.

**EGR 245 (3 CR.)****Engineering Mechanics–Dynamics**

Prerequisites: MTH 265 and EGR 240. Presents approach to kinematics of particles in linear and curvilinear motion. Includes kinematics of rigid bodies in plane motion. Teaches Newton's second law, work-energy and power, impulse and momentum, and problem solving using computers. Lecture 3 hours per week.

**EGR 246 (3 CR.)****Mechanics of Materials**

Prerequisite: EGR 240. Teaches concepts of stress, strain, deformation, internal equilibrium, and basic properties of engineering materials. Analyzes axial loads, torsion, bending, shear, and combined loading. Studies stress transformation and principle stresses, column analysis, and energy principles. Lecture 3 hours per week.



**EGR 248 (3 CR.)****Thermodynamics for Engineering**

Studies formulation of the first and second law of thermodynamics. Presents energy conversion, concepts of energy, temperature, entropy, and enthalpy, equations of state of fluids. Covers reversibility and irreversibility in processes, closed and open systems, cyclical processes, and problem solving using computers. Lecture 3 hours per week.

**EGR 251 (3 CR.)****Basic Electric Circuits I**

Prerequisite: MTH 264. Teaches fundamentals of electric circuits. Includes circuit quantities of charge, current, potential, power, and energy. Teaches resistive circuit analysis; Ohm's and Kirchoff's laws; nodal and mesh analysis; network theorems; and RC, RL, and RLC circuit transient response with constant forcing functions. Teaches AC steady-state analysis, power, and three-phase circuits. Presents frequency domain analysis, resonance, Fourier series, inductively coupled circuits, Laplace transform applications, and circuit transfer functions. Introduces problem solving using computers. Lecture 3 hours per week.

**EGR 252 (3 CR.)****Basic Electric Circuits II**

Prerequisite: EGR 251. Teaches fundamentals of electric circuits. Includes circuit quantities of charge, current, potential, power, and energy. Teaches resistive circuit analysis; Ohm's and Kirchoff's laws; nodal and mesh analysis; network theorems; and RC, RL, and RLC circuit transient response with constant forcing functions. Teaches AC steady-state analysis, power, and three-phase circuits. Presents frequency domain analysis, resonance, Fourier series, inductively coupled circuits, Laplace transform applications, and circuit transfer functions. Introduces problem solving using computers. Lecture 3 hours per week.

**EGR 255 (1 CR.)****Electric Circuits Laboratory**

Corequisite: EGR 252. Teaches principles and operation of laboratory instruments such as VOM, electronic voltmeters, digital multimeters, oscilloscopes, counters, wave generators, and power supplies. Presents application to circuit measurements, including transient and steady-state response of simple networks with laboratory applications of laws and theories of circuits plus measurement of AC quantities. Laboratory 3 hours per week.

**EGR 265 (4 CR.)****Digital Electronics and Logic Design**

Teaches number representation in digital systems; Boolean algebra; and design of digital circuits, including gates, flip-flops, counters, registers, architecture, microprocessors, and input-output devices. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**EGR 266 (3 CR.)****Linear Electronics**

Prerequisite: EGR 252. Presents theory of solid-state materials, electronic devices, and device applications. Teaches fundamentals of electronics circuits. Includes electronics circuit design, diodes and waveshaping circuits, transistors as linear devices, BJT-based circuit modules, FET-based circuit modules, AC amplifiers, frequency response of AC amplifiers, negative feedback, distortion, amplifiers performance, and linear applications of operational amplifiers. Also includes design with IC OP amps, sine wave oscillators, and communication systems. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Energy Technology

**ENE 228 (3 CR.)****Building Automation & Energy Management Systems**

Introduces building automation and energy management systems. Studies how building systems HVAC, lighting, security systems, and alternative energy--can communicate through a network of intelligent control devices. Emphasizes how these controlling devices work together in common automation. Lecture 2 hours, Lab 2 hours, Total 4 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## English Fundamentals

**BSK 41 (2 CR.)****Language Arts, Level 1**

Introduces basic reading and writing skills in preparation for subsequent courses by focusing on vocabulary development (simple phonics, dictionary skills), conventions of standard English (basic grammar, punctuation, sentence structure), reading comprehension (reading process, topics), study skills (time management, textbook format), and critical thinking skills (fact and opinion). Lecture 2 hours per week.

**ENF 1 (8 CR.)****Preparing for College English I**

Prerequisite: qualifying placement score. Provides integrated reading and writing instruction for students who require extensive preparation to succeed in college-level English courses. Students will place into this course based on placement test score. Upon successful completion and faculty recommendation, students will move into Preparing for College English II (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. Lecture 8 hours per week.

**ENF 2 (4 CR.)****Preparing for College English II**

Prerequisite: qualifying placement score. Provides integrated reading and writing instruction for students who require intermediate preparation to succeed in college-level English courses. Students will place into this course based on placement test score. Upon successful completion and faculty recommendation, students will move into Preparing for College English III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. Lecture 4 hours per week.

**ENF 3 (2 CR.)****Preparing for College English III**

Prerequisite: placement into ENF 3 or successful completion of ENF 1 or ENF 2. Corequisite is enrollment in a college-level English course. Provides integrated reading and writing instruction for students who require minimal preparation for college-level English but still need some preparation to succeed. Students in this course will be co-enrolled in college-level English. Students will place into this course based on placement test score. Credit is not applicable toward graduation. Lecture 2 hours per week.

## English

**ENG 100 (3 CR.)****Basic Occupational Communication**

Prerequisite: qualifying English testing score for ENG 100 or equivalent. Develops ability to communicate in occupational situations. Involves writing, reading, speaking, and listening. Builds practical skills such as handling customer complaints, writing various types of letters, and preparing for a job interview. (Intended for certificate and diploma students.) Lecture 3 hours per week.

**ENG 108 (3 CR.)****Critical Reading and Study Skills**

Prerequisite: successful completion of ENF 1 or ENF 2, under the Virginia Placement Test, or equivalent. Helps students improve their reading and learning processes. Includes advanced comprehension strategies and study skills such as time management, note-taking, studying from textbooks and other reading materials, taking examinations, and using the library. Lecture 3 hours per week.

**ENG 111 (3 CR.)****College Composition I**

Prerequisite: students must achieve satisfactory scores on placement tests, SATs, or ACTs as established by the VCCS and adopted by the College, or ENF 1 or ENF 2 under the Virginia Placement Test. Introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students refine topics; develop and support ideas; investigate, evaluate, and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences, and purposes. Writing activities will include exposition and argumentation with at least one researched essay. Lecture 3 hours per week.

**ENG 112 (3 CR.)****College Composition II**

Students must successfully complete ENG 111 or its equivalent, and must be able to use word processing software. Continues to develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. Requires students to locate, evaluate, integrate, and document sources and effectively edit for style and usage. Lecture 3 hours per week.

**ENG 114 (3 CR.)****Scientific Writing**

Prerequisite: ENG III or equivalent. Develops rhetorical expertise in the conventions of scientific argumentation and writing through reading scientific literature and composing scientific writings. Introduces plain style and common genres of scientific writing. Develops the ability to communicate scientific knowledge to diverse audiences. Guides the student in achieving typical voice, tone, style, audience, and content in formatting, editing, and graphics. Lecture 3 hours per week.

- ENG 115 (3 CR.) Technical Writing**  
Prerequisite: ENG 111 or division approval. Develops ability in technical writing through extensive practice in composing technical reports and other documents. Guides students in achieving voice, tone, style, and content in formatting, editing, and graphics. Introduces students to technical discourse through selected reading. Lecture 3 hours per week.
- ENG 116 (3 CR.) Writing for Business**  
Prerequisite: ENG 111 or division approval. Develops ability in business writing through extensive practice in composing business correspondence and other documents. Guides students in achieving voice, tone, style, and content appropriate to a specific audience and purpose. Includes instruction in formatting and editing. Introduces students to business discourse through selected readings. Lecture 3 hours per week.
- ENG 121-122 (3 CR.) (3 CR.) Introduction to Journalism I-II**  
Prerequisite: ENG 111 or 112 or division approval. Introduces students to all news media, especially news gathering and preparation for print. Lecture 3 hours per week.
- ENG 123 (3 CR.) Writing for the World Wide Web**  
Prerequisite: ENG 111 or division approval. Introduces basic web page design. Teaches students how to outline, compose, organize, and edit written materials for publication on the World Wide Web. Teaches students how to design basic web pages, compose website layout, and develop website navigation for a variety of possible audiences. Lecture 3 hours per week.
- ENG 125 (3 CR.) Introduction to Literature**  
Prerequisite: ENG 111 or its equivalent and ability to use word processing software. Introduces students to a range of literary genres that may include poetry, fiction, drama, creative nonfiction, and other cultural texts, as it continues to develop college writing. Lecture 3 hours per week.
- ENG 131 (3 CR.) Technical Report Writing I**  
Prerequisite: ENG 111 or equivalent or division approval. Offers a review of organizational skills including paragraph writing and basic forms of technical communications, various forms of business correspondence, and basic procedures for research writing. Includes instruction and practice in oral communication skills. Lecture 3 hours per week.
- ENG 135 (3 CR.) Applied Grammar**  
Prerequisite: ENG 111 or division approval. Develops ability to edit and proofread correspondence and other documents typically produced in business and industry. Instructs the student in applying conventions of grammar, usage, punctuation, spelling, and mechanics. Lecture 3 hours per week.
- ENG 139 (3 CR.) College Grammar**  
Prerequisite: English language skills equivalent to placement into ENG 111, or ENG 139 under COMPASS or ENF 3 under the Virginia Placement Test. Studies formal English grammar and effective expression with attention to recognizing and employing appropriately the various levels of English usage, thinking logically, speaking and writing effectively, editing, evaluating content and intent of both spoken and written English, and punctuating correctly. Lecture 3 hours per week.
- ENG 200 (3 CR.) Introduction to Linguistics**  
Prerequisite: ENG 111. Introduces the scientific study of language. Focuses on brain and language, phonetics, morphology, syntax, first and second language acquisition, language and society, and language in social contexts. Lecture 3 hours per week.
- ENG 205 (3 CR.) Technical Editing**  
Prerequisite: ENG 111 or equivalent. Prepares business and technical communicators to edit self-generated writings as well as writings prepared by others, including individual or collaborative authors. Teaches students to make editorial content decisions, verify information and copyright compliance, adapt and design formats for audience and purpose, and edit the work of several authors into a seamless final product. Covers basic proofreading and editing skills. Lecture 3 hours per week.
- ENG 210 (3 CR.) Advanced Composition**  
Prerequisite: ENG 112 or ENG 125, or division approval. Helps students refine skills in writing nonfiction prose. Guides development of individual voice and style. Introduces procedures for publication. Lecture 3 hours per week.
- ENG 211-212 (3 CR.) (3 CR.) Creative Writing I-II**  
Prerequisite: ENG 112 or ENG 125, or division approval. Introduces the student to the fundamentals of writing imaginatively. Students write in forms to be selected from poetry, fiction, drama, and essays. Lecture 3 hours per week.

**ENG 215–216 (3 CR.) (3 CR.)****Creative Writing: Fiction I–II**

Prerequisite for ENG 215: ENG 112 or ENG 125, or equivalent, or division approval. Prerequisite for ENG 216: ENG 215 or division approval. Introduces the student, in a workshop setting, to the fundamentals and techniques of writing short and long fiction. Lecture 3 hours per week.

**ENG 217–218 (3 CR.) (3 CR.)****Creative Writing: Poetry I–II**

Prerequisite for ENG 217: ENG 112 or ENG 125, or equivalent, or division approval. Prerequisite for ENG 218: ENG 217 or division approval. Introduces the student, in a workshop setting, to the fundamentals and techniques of writing poetry. Lecture or workshop 3 hours per week.

**ENG 219 (3 CR.)****Creative Writing: Drama**

Prerequisite: ENG 112 or ENG 125, or equivalent, or division approval. Introduces the student to the fundamentals and techniques of writing plays. Lecture 3 hours per week.

**ENG 221–222 (3 CR.) (3 CR.)****Advanced Journalism I–II**

Prerequisite: ENG 121, ENG 122, or equivalent courses, or division approval. Provides instruction in news and feature writing and other aspects of journalism. Lecture 3 hours per week.

**ENG 230 (3 CR.)****Mystery in Literature and Film**

Prerequisite: ENG 112 or ENG 125, or division approval. Studies the mystery as a genre, including history, types, and cultural aspects of stories, novels, plays, and film adaptations. Involves critical reading, writing, and viewing. Lecture 3 hours per week.

**ENG 236 (3 CR.)****Introduction to the Short Story**

Prerequisite: ENG 112 or ENG 125, or division approval. Examines selected short stories emphasizing the history of the genre. Involves critical reading and writing. Lecture 3 hours per week.

**ENG 237 (3 CR.)****Introduction to Poetry**

Prerequisite: ENG 112 or ENG 125, or division approval. Examines selected poetry, emphasizing the history of the genre. Involves critical reading and writing. Lecture 3 hours per week.

**ENG 241–242 (3 CR.) (3 CR.)****Survey of American Literature I–II**

Prerequisite: ENG 112 or ENG 125, or division approval. Examines American literary works from colonial times to the present, emphasizing the ideas and characteristics of our national literature. Involves critical reading and writing. Lecture 3 hours per week.

**ENG 243–244 (3 CR.) (3 CR.)****Survey of English Literature I–II**

Prerequisite: ENG 112 or ENG 125, or division approval. Studies major English works from the Anglo-Saxon period to the present, emphasizing ideas and characteristics of the British literary tradition. Involves critical reading and writing. Lecture 3 hours per week.

**ENG 247 (3 CR.)****Survey of Popular Culture**

Prerequisite: ENG 112 or ENG 125, or division approval. Analyzes familiar aspects of American culture, as seen through popular literature, with additional emphasis on television, film, and popular art. Lecture 3 hours per week.

**ENG 250 (3 CR.)****Children's Literature**

Prerequisite: ENG 112 or ENG 125, or division approval. Surveys the history of children's literature, considers learning theory and developmental factors influencing reading interests, and uses bibliographic tools in selecting books and materials for recreational interests and educational needs of children. Lecture 3 hours per week.

**ENG 251–252 (3 CR.) (3 CR.)****Survey of World Literature I–II**

Prerequisite: ENG 112 or ENG 125, or division approval. Examines major works of world literature. Involves critical reading and writing. Lecture 3 hours per week.

**ENG 253 (3 CR.)****Survey of African-American Literature I**

Prerequisite: ENG 112 or ENG 125, or division approval. Examines selected works by African-American writers from the colonial period to the present. Involves critical reading and writing. Lecture 3 hours per week.

**ENG 256 (3 CR.)****Literature of Scientific Fiction**

Prerequisite: ENG 112 or ENG 125, or division approval. Examines the literary and social aspects of science fiction, emphasizing development of ideas and techniques through the history of the genre. Involves critical reading and writing. Lecture 3 hours per week.

**ENG 257 (3 CR.)**

**Mythological Literature**

Prerequisite: ENG 112 or ENG 125, or division approval. Studies selected mythologies of the world as literature, emphasizing their common origins and subsequent influence on human thought and expression. Involves critical reading and writing. Lecture 3 hours per week.

stress, intonational, and rhythmic patterns of English through listening and speaking exercises. Includes individualized instruction to improve basic reading comprehension. Requires practice in writing with emphasis on building basic sentence structures, grammar, and sentence-level writing. Credits are not applicable toward graduation. Lecture 10 hours per week.

**ENG 258 (3 CR.)**

**Jane Austen: Selected Works**

Prerequisite: ENG 112. Examines the historical and social aspects of England during the early 1800's. Focuses on an in-depth analysis of several of Austen's published works leading to a thorough understanding of the Edwardian and Georgian periods of literature. Lecture 3 hours. Total 3 hours per week.

**ESL 21 (5 CR.)**

**Written Communication**

Prerequisite: ESL Placement Test recommendation for ESL Provides instruction in writing at the low-intermediate level. Improves students' competence in grammatical patterns of written English. Requires practice in writing sentences and longer pieces of writing. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ENG 261-262 (3 CR.) (3 CR.)**

**Advanced Creative Writing I-II**

Prerequisite: ENG 112 or ENG 125, or division approval. Guides the student in imaginative writing in selected genres on an advanced level. Lecture 3 hours per week.

**ESL 22 (5 CR.)**

**Reading and Vocabulary**

Prerequisite: ESL Placement Test recommendation for ESL Provides instruction in writing at the low-intermediate level. Provides instruction and practice in reading and vocabulary development at the low-intermediate level. Improves students' reading fluency, proficiency, and vocabulary to enable them to function adequately in ESL Level 3 and prepare for college-level reading. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ENG 279 (3 CR.)**

**Film and Literature**

Prerequisite: ENG 112 or ENG 125, or division approval. Examines literature and film as related forms of art and cultural expression. Lecture 3 hours per week.

**ESL 24 (5 CR.)**

**Oral and Written Communications I**

Prerequisite: An English placement test recommendation for ESL Level 2. Provides practice in the sound, stress, intonation, structural patterns, grammar, vocabulary, and idioms of beginning-level English. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ENG 280 (3 CR.)**

**Writing User Manuals**

Prerequisite: ENG 112 or ENG 125, or division approval. Provides instruction on how to design, write, and test a manual. Focuses on the principles used in writing technical manuals, the document process, design and drafting procedures, and finally, testing and revising the manual. Lecture 3 hours per week.

**ESL 31 (5 CR.)**

**Composition I**

Prerequisite: An English placement test recommendation for ESL Level 3 or successful completion of ESL 20. Provides instruction and practice in the writing process, emphasizing development of fluency in writing and competence in structural and grammatical patterns of written English. Credits are not applicable toward graduation. Lecture 5 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

**English as a Second Language**

A comprehensive english proficiency test is required for all English as a Second Language (ESL) classes.

**ESL 20 (10 CR.)**

**English as a Second Language II**

Prerequisite: An English placement test recommendation for ESL Level 2. Provides intensive instruction and practice at the low intermediate level. Provides an introduction to the sound system,



**ESL 32 (5 CR.)  
Reading I**

Prerequisite: An English placement test recommendation for ESL Level 3 or successful completion of ESL 20. Helps students improve their reading comprehension and vocabulary development. Improves students' reading proficiency to a level that would allow the students to function adequately in ESL 42 and other college classes. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ESL 33 (5 CR.)  
Oral Communications I**

Prerequisite: An English placement test recommendation for ESL Level 3 or successful completion of ESL 24. Helps students practice and improve listening and speaking skills as needed for functioning successfully in academic, professional, and personal settings. Assesses students' oral skills and includes, as needed, practice with pronunciation, rhythm, stress, and intonation. Provides exercises, practices, small and large group activities, and oral presentations to help students overcome problems in oral communication. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ESL 35 (3 CR.)  
Applied Grammar III**

Prerequisite: An English placement test recommendation for ESL Level 3 or higher or successful completion of ESL 20 or ESL 24. Provides instruction and practice in the use of intermediate-level academic English grammar structures including verb tenses, parts of speech, and basic sentence structure. Helps ESL students assess their own knowledge of English grammar, improve accuracy, and learn methods to improve editing. Credits are not applicable toward graduation. Lecture 3 hours per week.

**ESL 41 (5 CR.)  
Composition II**

Prerequisite: An English placement test recommendation for ESL Level 4 or successful completion of ESL 31. Provides further instruction and practice in the writing process and introduces advanced language patterns. Includes practice in developing and improving writing strategies. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ESL 42 (5 CR.)  
Reading II**

Prerequisite: An English placement test recommendation for ESL Level 4 or successful completion of ESL 32. Helps students improve their reading comprehension and vocabulary development. Improves students' reading proficiency to a level that would allow students to function adequately in

the ESL 52 reading class and other college courses. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ESL 45 (3 CR.)  
Applied Grammar IV**

Prerequisite: An English placement test recommendation for ESL Level 4 or higher or successful completion of ESL 31. Provides instruction and practice in the use of high intermediate and advanced academic English grammar structures including advanced verb forms, clauses, determiners, and prepositions. Helps ESL students assess their own knowledge of English grammar, improve accuracy, and learn methods to improve editing. Credits are not applicable toward graduation. Lecture 3 hours per week.

**ESL 48 (5 CR.)  
Writing Workshop**

Prerequisite: teacher recommendation from ESL 41. Provides an opportunity for further practice in intermediate and advanced writing techniques taught in required ESL writing courses. Provides reinforcement in writing skills, including composing, organizing, revising, and editing. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ESL 51 (5 CR.)  
Composition III**

Prerequisite: An English placement test recommendation for ESL Level 5 or successful completion of ESL 41 or ESL 48. Prepares for college-level writing by practice in the writing process, emphasizing development of thought in essays of greater length and complexity, and use of appropriate syntax and diction. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ESL 52 (5 CR.)  
Reading III**

Prerequisite: An English placement test recommendation for ESL Level 5 or successful completion of ESL 42. Helps students improve their reading comprehension and vocabulary development. Improves students' reading proficiency to a level that would allow students to succeed in certificate and degree programs. Emphasizes applying and synthesizing ideas. Includes ways to detect organization, summarize, make inferences, draw conclusions, evaluate generalizations, recognize differences between facts and opinions, and introduces other advanced comprehension strategies. May also include comprehensive library skills. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ESL 58 (5 CR.)  
Writing Workshop II**

Prerequisite: teacher recommendation from ESL 51. Provides an intensive writing seminar for students struggling with the writing process, editing, and self-correction in academic English. Helps students improve their fluency and command of American academic English. Credits are not applicable toward graduation. Lecture 5 hours per week.

**ESL 72 (3 CR.)  
Spelling and Vocabulary**

Prerequisite: An English placement test recommendation for ESL Level 3 or higher or successful completion of ESL 20 and ESL 24. Provides individualized instruction and practice in sound-letter correspondences. Introduces students to basic spelling rules, word division, prefixes, roots, and suffixes. Helps students master vocabulary through an understanding of homonyms, confusing words, and Greek and Latin roots. Stresses using words in context. Credits are not applicable toward graduation. Total 3 hours per week.

**ESL 73 (3 CR.)  
Accent Reduction**

Prerequisite: An English placement test recommendation for ESL Level 3 or higher or successful completion of ESL 20 and ESL 24. Provides contextualized practice at the high intermediate/advanced level to improve the speech and intelligibility of nonnative speakers of English. Focuses on problems of American English pronunciation, unclear individual sounds and positional variants, stress, rhythm, and intonation common to speakers of different language backgrounds. Credits are not applicable toward graduation. Lecture 3 hours per week.

## Environmental Science

**ENV 100 (3 CR.)  
Basic Environmental Science**

Presents and discusses basic scientific, health-related, ethical, economic, social, and political aspects of environmental activities, policies, and decisions. Emphasizes the multidisciplinary nature of environmental problems and their potential solutions. Lecture 3 hours per week.

**ENV 121 (4 CR.)  
General Environmental Science I**

Prerequisite: Satisfactory placement score for ENG 111. Explores fundamental components and interactions that make up the natural systems of the earth. Introduces the basic science concepts in the disciplines of biological, chemical, and earth sciences that are necessary to understand and address

environmental issues. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ENV 122 (4 CR.)  
General Environmental Science II**

Prerequisite: Satisfactory placement score for ENG 111. General Environmental Science I is recommended. Explores fundamental interactions between human populations and natural systems of the earth. Introduces the basic science behind the causes, effects, and mitigation of major environmental issues. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ENV 124 (4 CR.)  
Cross-Disciplinary Explorations in Science and Society**

Prerequisite: MTH 154. Provides multidisciplinary environmental science applications, primarily for nonscience majors. Integrates environmental science with topics from biology, chemistry, and geology. Addresses other scientific concepts according to the expertise of the instructor. Focuses on scientific investigations centered on a particular integrated, contemporary theme. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**ENV 136 (3 CR.)  
Survey of Environmental Concerns**

Studies the relationship of man to his physical environment; ecological principles; public health; topics of current importance including air pollution, potable water, waste disposal, communicable disease, poisoning and toxicity, and radiation, with particular emphasis on community action programs. Lecture 3 hours per week.

**ENV 161 (3 CR.)  
Introduction to Environmental Compliance**

Examines the statutory history of significant environmental legislation and the promulgation of rules and regulations attendant to these laws. Emphasis will be placed on 40 CFR and appropriate Virginia environmental code. Students will understand proper field techniques in sampling protocols for soil, water and air. Lecture 3 hours per week.

**ENV 227 (3 CR.)  
Environmental Law**

Prerequisite: two semesters of college-level science or division approval. Introduces environmental law including the history of environmental laws, the National Environment Policy Act, state environmental acts, hazardous wastes, endangered species, pollution, and surface mine reclamation. Lecture 3 hours per week.

**ENV 230 (3 CR.)****Applications in Environmental Science**

Prerequisites: ENG 4 under the COMPASS test, or successful completion of ENF 2, or placement recommendation for ENF 3 under the Virginia Placement Test, GIS 200. Introduces Global Positioning Systems (GPS) and Geographic Information Systems (GIS) hardware and software and applies the principles of GPS and GIS to forest science and environmental science. Includes natural disasters, pest control, water quality, prescribed burning, and identifying sources of pollution. This course covers the same content as GIS 230. Credit will not be granted for both courses. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Electronics Technology

**ETR 281 (3 CR.)****Digital Systems**

Includes basic numbering systems, Boolean algebra, logic circuits and systems, pulse circuits and pulse logic systems as applied to computer and microprocessor technology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ETR 286 (3 CR.)****Principles and Application of Robotics**

Provides an overview of terminology, principles, practices, and applications of robotics. Studies development, programming; hydraulic, pneumatic, electronic controls; sensors, and system troubleshooting. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Financial Services

**FIN 107 (3 CR.)****Personal Finance**

Presents a framework of personal money management concepts, including establishing values and goals, determining sources of income, managing income, preparing a budget, developing consumer buying ability, using credit, understanding savings and insurance, providing for adequate retirement, and estate planning. Lecture 3 hours per week.

**FIN 108 (3 CR.)****Principles of Securities Investment**

Provides an introduction to the fundamentals of the security investment process. Reviews the investment strategy associated with various types of stock orders, discusses the fundamental and technical approaches to common stock analysis, and examines bond and preferred stock pricing mechanisms. Also reviews the unique aspects of derivative security, mutual fund, real estate, and limited partnership investments. Lecture 3 hours per week.

**FIN 141 (3 CR.)****Principles of Credit Union Operations I**

Prerequisite: FIN 140 or division approval. Presents functions of teller transactions, loan approval, financial counseling, and collection procedures and systems. Addresses such topics as delinquency control and current regulations and policies governing credit unions. Lecture 3 hours per week.

**FIN 142 (3 CR.)****Principles of Credit Union Operations II**

Prerequisite: FIN 141 or division approval. Examines the financial management skills necessary to operate a credit union. Emphasizes implications of risk management and insurance. Explores investment procedures and teaches use of sound accounting principles. Lecture 3 hours per week.

**FIN 215 (3 CR.)****Financial Management**

Introduces basic financial management topics including statement analysis, working capital, capital budgeting, and long-term financing. Focuses on Net Present Value and Internal Rate of Return techniques, lease versus buy analysis, and Cost of Capital computations. Uses problems and cases to enhance skills in financial planning and decision making. Lecture 3 hours per week.

**FIN 248 (3 CR.)****International Finance**

Exposes the student to the international financial environment. Focuses on the financial management of businesses operating in international markets. Includes topics such as importance of international finance; monetary systems; foreign exchange risk; and short-term and long-term financial markets including how to manage political risk. Lecture 3 hours per week.

**FIN 260 (2 CR.)****Financial Management for Small Business**

Prerequisite: ACC 220 or ACC 211 and BUS 165.

Provides the tools of financial planning for the small business owner. Includes areas such as financial statements, ratio analysis, forecasting profit, cash flow, pricing, and obtaining capital. Lecture 2 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Fire Science Technology

**FST 100 (3 CR.)****Principles of Emergency Services**

This course provides an overview to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; and introduction to fire strategy and tactics. Lecture 3 hours per week.

**FST 110 (3 CR.)****Fire Behavior and Combustion**

Prerequisite or corequisite: MTH 154. This course explores the theories and fundamentals of how and why fires start, spread, and how they are controlled. Lecture 3 hours per week.

**FST 111 (3 CR.)****Hazardous Materials Response**

Studies hazardous materials storage, standards, and applicable laws designed to protect the public and emergency personnel. Discusses specific methods and techniques used by the emergency worker in the abatement of hazardous materials incidents. Lecture 3 hours per week.

**FST 112 (3 CR.)****Hazardous Materials Chemistry**

This course provides basic fire chemistry relating to the categories of hazardous materials including problems of recognition, reactivity, and health encountered by firefighters. Lecture 3 hours per week.

**FST 115 (3 CR.)****Fire Prevention**

This course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, the relationships of

fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education. Lecture 3 hours per week.

**FST 120 (3 CR.)****Occupational Safety and Health for the Fire Service**

Prerequisite: FST 100. This course introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk evaluation and control procedures for fire stations, training sites, emergency vehicles, and emergency situations involving fire, EMS, hazardous materials, and technical rescue. Upon completion of this course, students should be able to establish and manage a safety program in an emergency service organization. Lecture 3 hours per week.

**FST 121 (3 CR.)****Principles of Fire and Emergency Services Safety and Survival**

Introduces basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services. Lecture 3 hours per week.

**FST 135 (3 CR.)****Fire Instructor I**

Emphasizes development of teaching methods and aids, including role-playing, small group discussion, and development of individual learning methods and materials. Requires students to develop lesson plans and make presentations on appropriate topics. Based on current requirements of NFPA 1041, Standards for Fire Instructor Professional Qualifications, and prepares student for certification as Fire Instructor I. Lecture 3 hours per week.

**FST 205 (3 CR.)****Fire Protection Hydraulics and Water Supply**

This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. Lecture 3 hours per week.

**FST 210 (3 CR.)****Legal Aspects of Fire Service**

Prerequisite: FST 100. This course introduces the federal, state, and local laws that regulate emergency services, national standards influencing emergency services, standard of care, tort, liability, and a review of relevant court cases. Lecture 3 hours per week.

**FST 215 (3 CR.)  
Fire Protection Systems**

Prerequisite: MTH 154 or higher, FST 100, FST 110, and FST 115. This course provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. Lecture 3 hours per week.

**FST 220 (3 CR.)  
Building Construction for Fire Protection**

This course provides the components of building construction that relate to fire and life safety. The focus of this course is on firefighter safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. Lecture 3 hours per week.

**FST 235 (3 CR.)  
Strategy and Tactics**

Prerequisite: FST 100. Provides an in-depth analysis of the principles of fire control through utilization of personnel, equipment, and extinguishing agents on the fire ground. Lecture 3 hours per week.

**FST 237 (3 CR.)  
Emergency Service Supervision**

Teaches the history of modern management theories, including scientific management and behavioral scientist approach. Introduces concepts of group dynamics, leadership, communication, stress and time management, and personnel evaluation techniques. Discusses the legal and ethical considerations of personnel management in the emergency service. Lecture 3 hours per week.

**FST 240 (3 CR.)  
Fire Administration**

Prerequisite or corequisite: FST 100. This course introduces the student to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis on fire service leadership from the perspective of the company officer. Lecture 3 hours per week.

**FST 245 (3 CR.)  
Fire and Risk Analysis**

Prerequisite: FST 240. Presents a study of current urban fire problems with emphasis on solutions based upon current available technology. Includes master planning, as well as methods of identifying, analyzing, and measuring accompanying risk and loss possibilities. Lecture 3 hours per week.

**FST 255 (3 CR.)  
Fire Officer III**

Prerequisite: FST 250 or Certification as Fire Officer II. Presents the material and testing required for certification as a Fire Officer III under the National Standard for Fire Officer Professional Qualifications, NFPA 1021. Includes instruction for those serving in or preparing for middle and upper ranks of large fire departments. Includes community awareness and public relations, human resource development, budget information management, public education, emergency service delivery, and firefighter safety. Lecture 3 hours per week.

## French

**FRE 101-102 (4 CR.) (4 CR.)  
Beginning French I-II**

Prerequisite for FRE 102: FRE 101. Introduces understanding, speaking, reading, and writing skills; emphasizes basic French sentence structure. Lecture 5 hours per week.

**FRE 103-104 (3 CR.) (3 CR.)  
Basic Spoken French I-II**

Prerequisite for FRE 104: FRE 103. Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

**FRE 201-202 (3 CR.) (3 CR.)  
Intermediate French I-II**

Prerequisite for FRE 201: FRE 102 or equivalent. Prerequisite for FRE 202: FRE 201. Continues to develop understanding, speaking, reading, and writing skills. French is used in the classroom. Lecture 3 hours per week.

**FRE 211-212 (3 CR.) (3 CR.)  
Intermediate French Conversation I-II**

Prerequisite for FRE 211: FRE 202 or equivalent. Prerequisite for FRE 212: FRE 211. Continues to develop fluency through emphasis on idioms and other complex sentence structures. Lecture 3 hours per week.

**FRE 233 (3 CR.)  
Introduction to the Culture and Literature of France I**

Prerequisite: FRE 202. Introduces the student to French culture and literature through reading and discussing selected texts in the French language. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**



## Geographic Information Systems

### **GIS 101 (3 CR.)**

#### **Introduction to Geospatial Technology**

Prerequisite: basic computer literacy. Provides an introduction to the concepts of Geographic Information Systems (GIS), Global Positioning Systems (GPS), and remote sensing components of geospatial technology. Teaches the introductory concepts of geographic location and problem solving by using GIS and GPS units in demonstrating solutions to cross-curricular applications of the technology. Part I of II. Lecture 3 hours per week.

### **GIS 200 (4 CR.)**

#### **Geographical Information Systems I**

Prerequisite: ITE 115 or instructor approval. Provides hands-on introduction to a dynamic desktop GIS (Geographic Information System). Introduces the components of a desktop GIS and their functionality. Emphasizes manipulation of data for the purpose of analysis, presentation, and decision-making. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

### **GIS 201 (4 CR.)**

#### **Geographical Information Systems II**

Prerequisite: GIS 200. Provides a continuation of GIS 200, with emphasis on advanced topics in problem-solving, decision-making, modeling, programming, and data management. Covers map projections and data formats, and methods for solving the problems they create. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

### **GIS 203 (3 CR.)**

#### **Cartography For GIS**

Prerequisite: GIS 200. Focuses on the fundamental cartographic concepts used in planning, designing, and creating effective maps. Provides the foundation to critically evaluate maps to produce accurate and visually pleasing cartographic displays that convey information in a manner that enables easy interpretation. Includes topics of map compilation, map design, map types, and critical evaluation of map content. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **GIS 205 (4 CR.)**

#### **Geographical Information Systems: 3-Dimensional Analysis**

Prerequisite: GIS 201. Introduces GIS 3D (three-dimensional) concepts and practices with a concentration on displaying, creating, and analyzing spatial GIS data using 3D. Covers 3D shape files, 3D data formats such as Tin's, DEM's, grids, and controlling the perspective and scale of 3D data through rotating. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

### **GIS 210 (4 CR.)**

#### **Understanding Geographic Data**

Provides the student with an introduction to geographic data and the principles behind their construction. Introduces the concepts for measuring locations and characteristics of entities in the real world. Exposes the student to the limitations and common characteristics of geographic data. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

### **GIS 215 (4 CR.)**

#### **New GIS Software Platforms and Applications**

Assists users with the transition to newer GIS software platforms and applications. Students will learn concepts and terminology needed to become proficient in the latest GIS software. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

### **GIS 220 (4 CR.)**

#### **Introduction to Urban and Regional Planning**

Provides students with a basic understanding of urban and regional planning concepts and tasks, and how they can be managed using GIS. After completing the course, students will be able to use GIS software to address real-world social, economic, and environmental planning problems. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

### **GIS 225 (4 CR.)**

#### **GIS Applications for Tax Assessors**

Provides an introduction to the use of GIS in the local government tax assessment process. Students learn to apply common GIS technical skills to property valuation and the defense of assessed values. This course also teaches how to create spatial queries, produce maps, generate statistics, manipulate tabular data, use charts, and employ other technical skills in major topic areas including special regulations, ratio studies, comparable sales, and parcel data development and maintenance. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

### **GIS 230 (3 CR.)**

#### **Applications in Environmental Science**

Prerequisites: ENG 4 under the COMPASS test, or successful completion of ENF 2, or placement recommendation for ENF 3 under the Virginia Placement Test, GIS 200. Introduces Global Positioning Systems (GPS) and Geographic Information Systems (GIS) hardware and software and applies the principles of GPS and GIS to forest science and environmental science. Includes natural disasters, pest control, water quality, prescribed burning, and identifying sources of pollution. This course covers the same content as ENV 230. Credit will not be granted for both courses. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**GIS 255 (3 CR.)**  
**Exploring Our Earth: Introduction to Remote Sensing**

Prerequisite: GIS 200. Introduces material to understand the fundamental physical and mathematical principles and techniques of Remote Sensing. Introduces how each part of the electromagnetic spectrum is used to gather data about Earth. Describes limitations imposed by satellites, aircraft, and sensors. Surveys various methods to access and apply Earth observation/Remote Sensing data. Teaches students to use Remote Sensing software to process and manipulate Landsat, SPOT, photographic, and other imagery in a hands-on approach to Remote Sensing analysis. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

## Geography

**GEO 200 (3 CR.)**  
**Introduction to Physical Geography**

Studies major elements of the natural environment including earth-sun relationship, landforms, weather and climate, natural types of vegetation, and soils. Introduces the student to types and uses of maps. Lecture 3 hours per week.

**GEO 210 (3 CR.)**  
**People and the Land: An Introduction to Cultural Geography**

Focuses on the relationship between culture and geography. Presents a survey of modern demographics, landscape modification, material and nonmaterial culture, language, race and ethnicity, religion, politics, and economic activities. Introduces the student to types and uses of maps. Lecture 3 hours per week.

**GEO 220 (3 CR.)**  
**World Regional Geography**

Studies physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions, and examines the geographical background of those problems. Introduces the student to types and uses of maps. Lecture 3 hours per week.

**GEO 221 (3 CR.)**  
**Regions of the World I**

Presents an overview of physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions. Studies the European cultural sphere including Europe, Soviet Union, the Americas, and Australia and the emerging nations in Africa, Southwest Asia, and the Orient. Introduces the student to types and uses of maps. Part I of II. Lecture 3 hours per week.

**GEO 222 (3 CR.)**  
**Regions of the World II**

Presents an overview of physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions. Studies the European cultural sphere including Europe, Soviet Union, the Americas, and Australia and the emerging nations in Africa, Southwest Asia, and the Orient. Introduces the student to types and uses of maps. Part II of II. Lecture 3 hours per week.

**GEO 225 (3 CR.)**  
**Economic Geography**

Familiarizes the student with the various economic, geographic, political, and demographic factors that affect international target markets and trade activity. Lecture 3 hours per week.

**GEO 230 (3 CR.)**  
**Political Geography**

Emphasizes the influence of geography on political systems and nation states. Discusses historic and current events including campaigns, wars, and treaties as functions of land, resources, and energy requirements. Introduces the student to types and uses of maps. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Geology

**GOL 105 (4 CR.)**  
**Physical Geology**

Introduces the composition and structure of the earth and modifying agents and processes. Investigates the formation of minerals and rocks, weathering, erosion, earthquakes, and plate tectonics. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**GOL 106 (4 CR.)**  
**Historical Geology**

Traces the evolution of the earth and life through time. Presents scientific theories of the origin of the earth and life; interprets rock and fossil record. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**GOL 111-112 (4 CR.) (4 CR.)**  
**Oceanography I-II**

GOL 112 prerequisite: instructor permission. Examines the dynamics of the oceans and ocean basins. Applies the principles of physical, chemical, biological, and geological oceanography. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**GOL 135 (1 CR.)  
Field Studies in Geology**

Investigates geologic phenomena. Includes activities such as observation of regional geology and land forms, collection of samples, and measurement and interpretation of geologic structures. Field studies 3 hours per week.

**GOL 206 (4 CR.)  
Paleontology**

Prerequisite: GOL 106 or permission of instructor. Surveys major groups of fossil invertebrates and vertebrates. Covers form, function, ecology, and evolution for each group in the context of geologic time. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**GOL 207 (4 CR.)  
Mineralogy**

Prerequisite: GOL 105. Provides details for study of minerals. Focuses on the structure and properties of minerals, their occurrence, and uses. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**GOL 225 (4 CR.)  
Environmental Geology**

Prerequisite: GOL 105. Explores the interaction between man and his physical environment. Stresses geologic hazards and environmental pollution utilizing case histories. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## German

**GER 101-102 (4 CR.) (4 CR.)  
Beginning German I-II**

Prerequisite for GER 102: GER 101. Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structures. Lecture 5 hours per week.

**GER 103 (3 CR.)  
Basic Spoken German I**

Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

**GER 201-202 (3 CR.) (3 CR.)  
Intermediate German I-II**

Prerequisite for GER 201: GER 102 or equivalent. Prerequisite for GER 202: GER 201. Continues to develop understanding, speaking, reading, and writing skills. German is used in the classroom. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Greek

**GRE 101-102 (3 CR.) (3 CR.)  
Introduction to Ancient Greek I-II**

Prerequisite for GRE 102: GRE 101. Introduces the ancient Greek language. Designed to prepare the student for early readings in Hellenic or Hellenistic literature. Lecture 3 hours per week.

**GRE 201-202 (3 CR.) (3 CR.)  
Intermediate Ancient Greek I-II**

Prerequisites for GRE 201: GRE 101-102. Prerequisite for GRE 202: GRE 201. Introduces the reading of classical and Koine Greek with a review of Greek grammar, forms, and syntax. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Health

**HLT 105 (1 CR.)  
Cardiopulmonary Resuscitation**

Provides training in coordinated mouth-to-mouth artificial ventilation and chest compression techniques, includes life-saving practices for choking, life-threatening emergencies, and sudden illness. Lecture 1 hour per week.

**HLT 106 (2 CR.)  
First Aid and Safety**

Focuses on the principles and techniques of safety and first aid. Lecture 2 hours per week.

**HLT 110 (3 CR.)  
Concepts of Personal and Community Health**

Studies the concepts related to the maintenance of health, safety, and the prevention of illness at the personal and community level. Lecture 3 hours per week.

**HLT 138 (2 CR.)  
Principles of Nutrition**

Focuses on medical terminology for students preparing for careers in the health professions. Lecture 2 hours per week.

**HLT 141 (1 CR.)  
Introduction to Medical Terminology**

Focuses on medical terminology for students preparing for careers in the health professions. Lecture 1 hour per week.

<p><b>HLT 145</b> (2 CR.)  <b>Ethics for Healthcare Personnel</b>            Focuses on ethical concepts of health care. Emphasizes confidentiality, maintaining patient records, personal appearance, professionalism with patients/clients, associates, and an awareness of health care facilities. Lecture 2 hours per week.</p>	<p><b>HLT 220</b> (3 CR.)  <b>Concepts of Disease</b>            Emphasizes general principles, classifications, causes, and treatments of selected disease processes. Intended primarily for students enrolled in health technology programs. Lecture 3 hours per week.</p>
<p><b>HLT 170</b> (1 CR.)  <b>Introduction to Massage</b>            Introduces the student to the field of massage therapy. Student practices basic Swedish massage strokes, aromatherapy, effleurage, petrossage and friction, as well as indications and contra-indications for massage. Lecture 1 hour per week.</p>	<p><b>HLT 250</b> (3 CR.)  <b>General Pharmacology</b>            Emphasizes general pharmacology for the health-related professions; covers general principles of drug actions/reactions, major drug classes, specific agent within each class, and routine mathematical calculations needed to determine desired dosages. Lecture 3 hours per week.</p>
<p><b>HLT 180</b> (3 CR.)  <b>Therapeutic Massage I</b>            Prerequisites: HLT 170 and either NAS 150 or NAS 161–162 or BIO 141–142. Introduces the student to the history and requirements for massage therapy. Covers the terms and practice of massage with introduction to equipment, safety, and ethics as well as massage movements and techniques. Includes information about the benefits of massage, contra-indications, client interview, client-therapist relationship, draping, good body mechanics, and anatomical landmarks. Basic massage techniques are blended into a relaxing, health enhancing full-body session preparing the student for their student clinical experience. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.</p>	<p><b>HLT 271</b> (3 CR.)  <b>Physical Care Management of the Older Adult</b>            Introduces the physiology of aging; integrates caretaker guidelines; demonstrates skills to care for aging at a variety of functional levels. Prerequisite: Admission to the Program. Lecture 3 hours per week.</p>
<p><b>HLT 200</b> (3 CR.)  <b>Human Sexuality</b>            Provides a basic understanding of human sexuality. Includes anatomy, physiology, pregnancy, family planning, venereal diseases, and sexual variations. Lecture 3 hours per week.</p>	<p><b>HLT 272</b> (3 CR.)  <b>Medical Management of the Older Adult</b>            Introduces common medical problems associated with the aging; examines preventive and restorative care associated with common illnesses. Focuses on assessments, evaluation, and safe administration of medications. Includes emergency care and CPR. Lecture 3 hours per week.</p>
<p><b>HLT 206</b> (3 CR.)  <b>Exercise Science</b>            Surveys scientific principles, methodologies, and research as applied to exercise and physical fitness. Emphasizes physiological responses and adaptations to exercise. Addresses basic elements of kinesiology, biomechanics, and motor learning. Presents an introduction to the physical fitness industry. Lecture 3 hours per week.</p>	<p><b>HLT 280</b> (3 CR.)  <b>Therapeutic Massage II</b>            Prerequisite: HLT 180. Introduces the concepts and techniques of deep bodywork, focusing, and sports massage including the principles of health-related fitness core exercises, pre- and post-event massage, and hydrotherapy. Concentrates on the integration of musculoskeletal anatomy and physiology into massage techniques. Includes discussion of therapist wellness principles and self-care and the integration of massage therapy into the healthcare fields. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.</p>
<p><b>HLT 215</b> (3 CR.)  <b>Personal Stress and Stress Management</b>            Provides a basic understanding of stress and its physical, psychological, and social effects. Includes the relationships between stress and change, self-evaluation, sources of stress, and current coping skills for handling stress. Lecture 3 hours per week.</p>	

**HLT 281 (3 CR.)  
Therapeutic Massage III**

Prerequisites: HLT 280 and PTH 151. Introduces the concept of consultation, client management, session design, and integration of specific therapeutic approaches into a full-body session. Students learn to give specific therapeutic attention to the regions of the back, neck, and torso. Using knowledge of muscle anatomy, students perform more advanced massage techniques to address hypertonicity, chronic ischemia, trigger points, fibrotic tissue, adhesions and scar tissue. Includes common clinical applications in the body regions covered and the integration of specific techniques into a full body session. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Health Information Management

Enrollment in HIM courses (except HIM 100) is restricted to students program-placed in Health Information Management programs.

**HIM 100 (1 CR.)  
Introduction to the Healthcare Delivery System**

Introduces the organization of the healthcare delivery system with emphasis on types of providers and the role that accrediting and licensing bodies play in the delivery of healthcare. Lecture 1 hour per week.

**HIM 110 (3 CR.)  
Introduction to Human Pathology**

Prerequisite or corequisite: HIM 111. Introduces the basic concepts, terminology, etiology, and characteristics of pathological processes. Lecture 3 hours per week.

**HIM 111 (3 CR.)  
Medical Terminology I**

Introduces the student to the language used in the health record. Includes a system-by-system review of anatomic, disease, and operative terms, abbreviations, radiography procedures, laboratory tests, and pharmacology terms. Lecture 3 hours per week.

**HIM 121 (4 CR.)  
Medical Transcription I**

Prerequisite: typing speed of 40 words per minute. Develops skills in the transcription of various medical record reports, use of transcription references, and proofreading reports. Evaluates the productivity and organization of transcription departments/services and the quality of transcribed reports and equipment

utilized. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

**HIM 122 (4 CR.)  
Medical Transcription II**

Prerequisite: HIM 121. Develops skills in the transcription of various medical record reports, use of transcription references and proofreading reports. Evaluates the productivity and organization of transcription departments/services and the quality of transcribed reports and equipment utilized. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

**HIM 130 (3 CR.)  
Healthcare Information Systems**

Teaches basic concepts of microcomputer software to include operating systems, word processing, spreadsheets, and database applications. Focuses on microcomputer applications and information systems in the healthcare environment. Provides a working introduction to electronic health information systems for allied health, teaching students how the adoption of electronic health records affects them as future healthcare professionals. Lecture 3 hours per week.

**HIM 141 (3 CR.)  
Fundamentals of Health Information Systems I**

Focuses on health data collection, storage, retrieval, and reporting systems, with emphasis on the role of the computer in accomplishing these functions. Lecture 3 hours per week.

**HIM 142 (3 CR.)  
Fundamentals of Health Information Systems II**

Prerequisite: HIM 141. Focuses on health data collection, storage, retrieval, and reporting systems, with emphasis on the role of the computer in accomplishing these functions. Lecture 3 hours per week.

**HIM 151 (2 CR.)  
Reimbursement Issues in Medical Practice Management**

Introduces major reimbursement systems in the United States. Focuses on prospective payment systems, managed care, and documentation necessary for appropriate reimbursement. Emphasizes management of practice to avoid fraud. Lecture 2 hours per week.



**HIM 200 (3 CR.)****Survey of Healthcare Administration**

Provides an overview of healthcare. Prepares the student with the essential vocabulary and thought processes to understand and evaluate the legal, political, and ethical challenges facing healthcare in the U.S. needed for a supervisory role in healthcare administration. Introduces healthcare policy, how healthcare is organized and dispensed, and how the practitioner can better work in the system. Lecture 3 hours per week.

**HIM 215 (5 CR.)****Health Data Classification Systems**

Prerequisites: HIM 110 and BIO 141 or NAS 150 or permission of instructor. Focuses on disease and procedure classification systems currently utilized for collecting health data for the purposes of statistical research and financial reporting. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

**HIM 220 (3 CR.)****Health Statistics**

Prerequisites: HIM 130 and 141 or permission of instructor. Introduces the student to basic statistical principles and calculations as applied in the healthcare environment. Focuses on procedures for collection and reporting vital statistics, basic quality control population statistical information. In addition, students will learn the fundamentals of standard deviation, normal distribution, and histograms. Lecture 3 hours per week.

**HIM 225 (2 CR.)****Quality Assurance in Healthcare**

Prerequisites: HIM 141 and HIM 215 or permission of instructor. Presents medical care evaluation techniques, utilization review activities, peer review organization requirements, and risk management. Lecture 2 hours per week.

**HIM 226 (2 CR.)****Legal Aspects of Health Record Documentation**

Prerequisites: HIM 142 and HIM 220 or permission of instructor. Presents the legal requirements associated with health record documentation. Emphasizes the policies and procedures concerning the protection of the confidentiality of the patient's health record. Lecture 2 hours per week.

**HIM 229 (2 CR.)****Performance Improvement in Healthcare Settings**

Prerequisite: HIM 226. Focuses on concepts of facility-wide performance improvement, resource management, and risk management. Applies tools for data collection and analysis. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**HIM 230 (3 CR.)****Information Systems and Technology in Healthcare**

Prerequisites: HIM 130 and HIM 142. Explores computer technology and system application in healthcare. Introduces the information systems life cycle. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**HIM 233 (3 CR.)****Electronic Health Records Management**

Prerequisite: HIM 230. Studies new trends in management and processing of health information with emphasis on the electronic health record (EHR). Covers the definition, benefits, standards, functionality, confidentiality and security, and impact of the EHR in the healthcare environment. Explores implementation of the EHR including infrastructure required, project management techniques, information technology systems, workflow processes and redesign in various healthcare settings. Discusses legal issues created by implementation of the EHR. Lecture 3 hours per week.

**HIM 249 (3 CR.)****Supervision and Management Practices for HIM**

Prerequisite: HIM 226. Introduces supervision and management principles with emphasis on the application of these principles in the health information setting. Lecture 3 hours per week.

**HIM 250 (4 CR.)****Health Data Classification Systems I: ICD-9-CM**

Prerequisites: HIM 110, HIM 142, HIM 260 and BIO 142. Focuses on disease and procedure classification using ICD-9-CM. This system is currently utilized for collecting health data for the purpose of statistical research and financial reporting. Lecture 4 hours per week.

**HIM 251 (3 CR.)****Clinical Practice I**

Prerequisite: HIM 226. Supervises student practice in health information activities conducted in a variety of clinical settings. Clinical 6 hours per week.

**HIM 252 (3 CR.)****Clinical Practice II**

Prerequisites: HIM 250 and HIM 251. Corequisites: HIM 254 and HIM 255. Prepares the Health Information Management student to perform all functions commonly allocated to health record services. Gives practice in various settings under the supervision of a clinical practice supervisor. Clinical practice at various facilities 6 hours per week.

**HIM 254 (3 CR.)****Advanced Coding and Reimbursement**

Prerequisite: HIM 250. Corequisite: HIM 255.  
Stresses advanced coding skills through practical exercises using actual medical records. Introduces CPT-4 coding system and guidelines for outpatient/ambulatory surgery coding. Introduces prospective payment system and its integration with ICD-9-CM coding. Lecture 3 hours per week.

**HIM 255 (2 CR.)****Health Data Classification Systems II: CPT**

Prerequisites: HIM 110, HIM 111, and HIM 250 plus either BIO 141–142 or NAS 150 or permission of instructor. Focuses on procedure classification using CPT. This system is currently utilized for collecting health data for the purposes of statistical research and financial reporting. Lecture 2 hours per week.

**HIM 260 (3 CR.)****Pharmacology for Health Information Management**

Prerequisites/corequisites: HIM 110, HIM 111, BIO 142, NAS 150 (CDC only). Emphasizes general pharmacology for health information professions. Covers general principles of drug actions/reactions, major drug classes, specific agents within each class, and routine mathematical calculation needed to determine desired dosages. Lecture 3 hours per week.

**HIM 280 (1 CR.)****HIM Capstone**

Prerequisite: completion of all necessary coursework for graduation. Integrates and applies knowledge and skills learned in prior HIM courses, focusing on those required to prepare for national certification in American Health Information Management Association's Domains, Sub-domains, and Tasks. Includes a capstone project in which students apply principles of good practice in health information management. Lecture 1 hour per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Health Information Technology

**HIT 100 (1 CR.)****Introduction to the Healthcare Delivery System**

Introduces the organization of the health care system. Introduces the concepts necessary to be a successful professional in the health care industry. Covers the roles various health professionals, issues in healthcare industry. Covers the role various health professionals, issues in healthcare with implications

for healthcare workers, and skills unique to the health care setting. Lecture 1 hour per week.

**HIT 130 (3 CR.)****Introduction to Computers in Healthcare**

Introduces students to computers in healthcare. Provides a basic overview of computer architecture, common software applications and their use in healthcare, electronic data management, adoption of the electronic health record (EHR), and privacy and security. Lecture 2 hours. Lab 3 hours. Total 5 hours per week.

**HIT 132 (3 CR.)****Health-IT Infrastructure Development**

Introduces, the various system life cycle. Covers processes in the design of electronic health information system, operational management, and medical legal issues facing healthcare. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**HIT 141 (3 CR.)****Introduction to Healthcare and Health-IT in the U.S.**

Focuses on how healthcare is organized and services are delivered in the evolving electronic healthcare environment. Covers public policy, the interrelationship of healthcare facilities and regulatory organizations, legal and regulatory issues, healthcare financing, the history and adoption of electronic health records (EHRs) and health-IT, and reinforces the roles of healthcare professionals. Covers evolving healthcare initiatives in the electronic environment. Lecture 3 hours per week.

**HIT 229 (3 CR.)****Performance Improvement and Data Usage in Healthcare**

Focuses on how healthcare is organized and services are delivered in Explores the history and development of the performance improvement process. Address licensure/accreditation, utilization management, risk management, process management, and the medical staff credentialing and privileging. Covers clinical communication and health information exchange. Covers approaches to assess patient safety, implementing quality management and reporting using electronic systems. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**HIT 230 (3 CR.)****Computer Applications in Healthcare**

Covers systems planning, acquisition, implementation, technology support, strategic planning and governance; as well as threats to security of health information. Covers the value and organization of healthcare information system (IS) and the role of the Information Technology (IT) Department. Lecture 3 hours per week.

**HIT 233 (3 CR.)****Working with Electronic Health Records**

Provides an in depth analysis of the electronic health record (EHR). Explores the features of EHRs as they relate to practical deployment in the healthcare setting. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**HIT 235 (3 CR.)****Emerging Technologies in Health-IT**

Provides an overview of various emerging technologies. Explores how healthcare technologies are used to treat patient, promote safety, and improve patient care. Discuss legal issues created by implementation of the electronic health record. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

## History

**HIS 101-102 (3 CR.) (3 CR.)****History of Western Civilization I-II**

Examines the development of Western civilization from ancient times to the present. The first semester ends with the 17th century; the second semester continues through modern times. Lecture 3 hours per week.

**HIS 111-112 (3 CR.) (3 CR.)****History of World Civilization I-II**

Surveys Asian, African, Latin American, and European civilizations from the ancient period to the present. Lecture 3 hours per week.

**HIS 121-122 (3 CR.) (3 CR.)****United States History I-II**

Surveys United States history from its beginning to the present. Lecture 3 hours per week.

**HIS 125 (3 CR.)****History of the American Indian**

Examines the history and culture of the native peoples of the Americas. Lecture 3 hours per week.

**HIS 126 (3 CR.)****Women in World History**

Studies the role of women and attitudes toward women from ancient times to the present. Lecture 3 hours per week.

**HIS 127 (3 CR.)****Women in American History**

Studies the role of women and attitudes toward women in American society from colonial times to the present. Lecture 3 hours per week.

**HIS 135 (3 CR.)****History of the Contemporary World**

Analyzes world developments since World War II. Lecture 3 hours per week.

**HIS 141-142 (3 CR.) (3 CR.)****African-American History I-II**

Surveys the history of African-Americans from their African origins to the present. Lecture 3 hours per week.

**HIS 180 (3 CR.)****Historical Archaeology**

Introduces both the methods and theories in historical archaeology as practiced in the United States and worldwide. Includes time and space, field survey, excavation, and archival and laboratory research. Some field trips to site excavations. Lecture 3 hours per week.

**HIS 181 (3 CR.)****Introduction to Historic Preservation**

Provides a foundation and introduction to historic preservation practices and issues in Virginia and the United States. Emphasizes legislation, policies, and methodologies that form our present national, state, and local preservation systems. Includes specific treatment of Alexandria, Arlington, Fairfax, and Loudoun counties. Lecture 3 hours per week.

**HIS 183 (3 CR.)****Survey of Museum Practice**

Explores the role of the museum in society and traces the foundations upon which these public, cultural, and educational institutions are built. Emphasizes the management and interpretation of historic properties and collections. Lecture 3 hours per week.

**HIS 186 (3 CR.)****Collections Management**

Discusses the fundamentals of collections policy, deaccessioning, appraisal, and curatorial management. Lecture 3 hours per week.

**HIS 187 (3 CR.)****Interpreting Material Culture**

Surveys America's material culture and provides techniques to interpret artifacts. Lecture 3 hours per week.

**HIS 188 (3 CR.)****Field Survey Techniques for Archaeology**

Provides an introduction to basic field techniques used in surveying archaeological and architectural sites. Emphasizes hands-on experience in both classroom and fieldwork. Includes methods to identify and record archaeological sites and standing structures; to nominate sites to the National Register of Historic Places; to address relevant preservation laws; and to preserve, mark, and catalogue artifacts in the laboratory. Lecture 3 hours per week.

<b>HIS 199</b> <b>Supervised Study/Independent Project</b> See General Usage Course section at the beginning of the Course Descriptions.	<b>(1–5 CR.)</b>	<b>HIS 255</b> <b>History of Chinese Culture and Institutions</b> Examines traditional Chinese social, political, economic, and military institutions. Also examines major literary, artistic, and intellectual achievements from prehistoric times to the present. Lecture 3 hours per week.	<b>(3 CR.)</b>
<b>HIS 203</b> <b>History of African Civilization I–II</b> Examines major social, economic, political, and religious developments from earliest times to the present. Lecture 3 hours per week.	<b>(3 CR.)</b>	<b>HIS 256</b> <b>History of Japanese Culture and Institutions</b> Examines traditional Japanese social, political, economic, and military institutions. Also examines major literary, artistic, and intellectual achievements from prehistoric times to the present. Lecture 3 hours per week.	<b>(3 CR.)</b>
<b>HIS 205</b> <b>Local History</b> Studies the history of the local community and/or region. Lecture 3 hours per week.	<b>(3 CR.)</b>	<b>HIS 267</b> <b>The Second World War</b> Examines causes and consequences of the Second World War. Includes the rise of totalitarianism, American neutrality, military developments, the home fronts, diplomacy, and the decision to use the atomic bomb. Lecture 3 hours per week.	<b>(3 CR.)</b>
<b>HIS 211</b> <b>History of England I</b> Surveys the history of the British Isles from pre-Celtic times to the present. Lecture 3 hours per week.	<b>(3 CR.)</b>	<b>HIS 268</b> <b>The American Constitution</b> Analyzes the origin and development of the United States Constitution. Includes the evolution of civil liberties, property rights, contracts, due process, judicial review, federal-state relationships, and corporate-government relations. Lecture 3 hours per week.	<b>(3 CR.)</b>
<b>HIS 218</b> <b>Introduction to Digital History</b> Introduces the methods, theories, and practices of digital history. Lecture 3 hours per week.	<b>(3 CR.)</b>	<b>HIS 269</b> <b>Civil War and Reconstruction</b> Studies factors that led to the division between the States. Examines the war, the home fronts, and the era of Reconstruction. Lecture 3 hours per week.	<b>(3 CR.)</b>
<b>HIS 231</b> <b>History of Latin American Civilizations I</b> Examines Latin American civilizations from pre-Columbian origins to the present. Lecture 3 hours per week.	<b>(3 CR.)</b>	<b>HIS 271</b> <b>The American Frontier 1607–1890</b> Studies the expansion across North America by peoples of Old World descent, the interaction of these settlers with the native nations they encountered, and the effects of this dynamic zone of contact between the Old World and New World on American society, values, identity, and character. Lecture 3 hours per week.	<b>(3 CR.)</b>
<b>HIS 241</b> <b>History of Russia I</b> Surveys history of Russia from earliest times to the present. Includes political, economic, multinational, social, and cultural aspects of Russian and Soviet history. Lecture 3 hours per week.	<b>(3 CR.)</b>	<b>HIS 276</b> <b>United States History Since World War II</b> Investigates United States history from 1946 to the present, studying both domestic developments and American involvement in international affairs. Lecture 3 hours per week.	<b>(3 CR.)</b>
<b>HIS 243</b> <b>History of the Ancient World I</b> Studies the history of the ancient world from the dawn of civilization in the Near East to the fall of Rome. Lecture 3 hours per week.	<b>(3 CR.)</b>		
<b>HIS 251</b> <b>History of Middle East Civilization I</b> Surveys intellectual, cultural, social, economic and religious patterns in the civilizations of the Middle East. Covers Semitic, Indo-European, and Turkic-speaking peoples from pre-Islamic to the present. Lecture 3 hours per week.	<b>(3 CR.)</b>		
<b>HIS 253–254</b> <b>History of Asian Civilizations I–II</b> Surveys the civilizations of Asia from their origins to the present. Lecture 3 hours per week.	<b>(3 CR.) (3 CR.)</b>		

**HIS 277 (3 CR.)****The American Experience in Vietnam**

Analyzes American involvement in Vietnam from World War II with emphasis on the presidencies of Johnson, Nixon, and Ford. Lecture 3 hours per week.

**HIS 279 (3 CR.)****Age of the American Revolution**

Examines the factors that led to the separation of the American Britain colonies from Great Britain. Covers the Revolutionary War, the problems faced by the revolutionary government, and postwar events that led to the adoption the United States Constitution. Lecture 3 hours per week.

**HIS 280 (3 CR.)****American Foreign Policy Since 1890**

Examines American foreign policy since 1890 with an emphasis on current events and diverse points of view. Lecture 3 hours per week.

**HIS 281–282 (3 CR.) (3 CR.)****History of Virginia I–II**

Examines the cultural, political, and economic history of the Commonwealth from its beginning to the present. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

## Horticulture

**HRT 100 (3 CR.)****Introduction to Horticulture**

Introduces commercial horticulture industry with emphasis on career opportunities. Examines equipment; facilities; and physical arrangements of production, wholesale, and retail establishments. Surveys individual areas within horticulture industry. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 115 (3 CR.)****Plant Propagation**

Teaches principles and practices of plant propagation. Examines commercial and home practices. Provides experience in techniques using seed-spores, cuttings, grafting, budding, layering, and division. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 117 (2 CR.)****Tools and Equipment**

Introduces tools and equipment used in commercial horticulture. Emphasizes power-operated equipment including spreaders, sprayers, saws, and tractors. Stresses safety, maintenance, minor repair, and appropriate tool selection. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**HRT 118 (2 CR.)****Turf Pests**

Covers identification, morphology, and life cycles of insects and other animals, including disease agents and weeds. Stresses diagnosis and management of specific turf pests. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**HRT 119 (3 CR.)****Irrigation Systems for Turf and Ornamentals**

Explains why, when, and how irrigation systems are used by the grounds management industry. Includes component selection, system design, installation, operation, and maintenance. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 120 (3 CR.)****History of Garden Design**

Studies the development of gardens as they chronicle the development of civilization. Introduces the periods, in both Europe and North America, beginning with settlement, on through industrial development, land and space utilization, to current environmental concerns. Explores physical and cultural influences on garden design and utilization. Lecture 3 hours per week.

**HRT 121 (3 CR.)****Greenhouse Crop Production I**

Examines commercial practices related to production of floricultural crops. Considers production requirements, environmental control and management, and cultural techniques affecting production of seasonal crops. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 125 (3 CR.)****Chemicals in Horticulture**

Emphasizes basic chemical principles and their application to horticulture. Introduces principles of inorganic and organic chemicals. Studies chemical activities of insecticides, fungicides, herbicides, fertilizers, and growth regulators. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 127 (3 CR.)****Horticultural Botany**

Studies taxonomy, anatomy, morphology, physiology, and genetics of plants as applied to identification, propagation, and culture. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 134 (3 CR.)****Four Season Food Production**

Familiarizes students with organic small-scale food production through lecture and demonstration. Includes seed saving, cover crops, and gardening planning. Lecture 3 hours per week.



**HRT 160 (2 CR.)****Applied Mathematics for the Green Industry**

Covers the basic math skills needed in the green industry to include areas, volumes, calibration calculations, profit and loss statements, and topics specific to turf, landscape, greenhouse, nursery, and interior landscapes. Lecture 2 hours per week.

**HRT 205 (3 CR.)****Soils**

Prerequisite: HRT 125. Teaches theoretical and practical aspects of soils and other growing media. Examines media components, chemical and physical properties, and soil organisms. Discusses management and conservation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 206 (2 CR.)****Pesticides in Horticulture**

Discusses pesticide selection, mixing, application, storage, and disposal. Stresses safety, environmental considerations, and legal restrictions. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**HRT 207 (3 CR.)****Plant Pest Management**

Teaches principles of plant pest management. Covers morphology and life cycles of insects and other small animal pests and plant pathogens. Lab stresses diagnosis, chemical and nonchemical control of specific pests, and pesticide safety. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 230 (2 CR.)****Site Analysis**

Examines basic landscape and site planning techniques, environmental considerations, and construction principles. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**HRT 231 (3 CR.)****Planting Design I**

Applies landscape theory and principles of drawing to the planning of residential and small-scale commercial projects. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 232 (3 CR.)****Planting Design II**

Prerequisite: HRT 231. Applies landscape theory and principles of drawing to the planning of large-scale landscape designs. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 244 (3 CR.)****Computer Aided Drafting and Design (CADD) for Landscape Designers**

Prerequisite: HRT 231. Corequisite: HRT 232. Provides instruction in the use of computer-aided drafting and design software for developing landscape plans and supporting information for drawings such as dimensions and area calculations. Lecture 3 hours per week.

**HRT 245 (3 CR.)****Woody Plants**

Studies identification, culture, and uses of woody plants in landscaping. Includes deciduous and evergreen, native and cultivated shrubs, trees, and vines. Teaches scientific and common names of plants. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 246 (3 CR.)****Herbaceous Plants**

Studies identification, culture, and uses of herbaceous plants in landscaping. Includes perennials, biennials, common bulbs, and annuals. Teaches scientific and common names of plants. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 247 (2 CR.)****Indoor Plants**

Studies identification, culture, and uses of indoor plants in interior landscaping. Includes tropical, subtropical, and non-hardy temperate plants. Teaches scientific and common names of plants. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**HRT 250 (2 CR.)****Plant Composition**

Prerequisite: HRT 245 or HRT 201. Applies basic identification and landscape traits of woody plants to the creation of groupings/combinations for effect in design. Lecture 2 hours per week.

**HRT 251 (3 CR.)****Site Engineering for Landscape Design**

Pre- or corequisite: HRT 231. It is also recommended, but not required, that the student take HRT 230 prior to taking this course. Applies skill sets and knowledge from planting design to the principles of engineering relating to the site. Includes developing topographical drawings, turning radius for vehicles, structural details, and other structural requirements with the design. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 252 (3 CR.)****Landscape Construction Drawings**

Prerequisites: HRT 231 and HRT 251. Pre- or corequisite: HRT 232. Applies skill sets and knowledge from the prerequisite foundation classes in Planting Design and Site Engineering to prepare a completed set of construction drawings and specifications. Combines basic drawing skills with the site analysis and engineering to develop drawings and specifications that can be reasonably implemented by contractors. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 259 (3 CR.)****Arboriculture**

Studies the techniques of tree care. Covers surgery, pruning, insect and disease recognition and control, fertilization, cabling, and lightning rod installation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 260 (3 CR.)****Introduction to Floral Design**

Teaches skills required for the composition of basic table arrangements. Includes the history of design styles, identification of flowers and greens, identification and use of equipment, and conditioning and handling of flowers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 266 (3 CR.)****Advanced Floral Design**

Prerequisite: HRT 260. Teaches skills required for composition of traditional and contemporary floral designs. Includes use of exotic flowers to create arrangement styles such as Japanese, European, Williamsburg, etc. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 267 (2 CR.)****Silk and Dried Flower Arranging**

Teaches skills required for composition of silk or dried floral arrangements. Includes a discussion of silk floral materials, supplies needed, and use of appropriate dried flowers. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**HRT 268 (3 CR.)****Advanced Floral Design Applications**

Teaches skills required for the composition of large floral arrangements. Includes wedding, funeral, and special occasion designs for the home as well as public areas. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 269 (3 CR.)****Professional Turf Care**

Covers turfgrass identification, selection, culture, propagation, and pest control. Surveys commercial turf care operations and use of common equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 275 (3 CR.)****Landscape Construction and Maintenance**

Examines practical applications of commercial landscape construction techniques, and materials used. Covers construction, planting, and maintenance. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**VEN 100 (3 CR.)****Introduction to Viticulture**

Introduces grapes, their history, distribution, classification, and areas of production. Provides an overview of grape uses and products made from them. Includes site selection and environmental factors that affect grapes and their quality. Lecture 3 hours per week.

**VEN 110 (3 CR.)****Vineyard Establishment**

Reviews sites, soils, and other factors that affect the planting of grapes. Covers vineyard designs, varieties, and the training of newly planted vines. Includes weed control and pest management of new vines. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**VEN 140 (3 CR.)****Viticulture Pest and Disease Management**

Viticulture Pest and Disease Investigates grape diseases, grape insects, and grape pests. Studies and evaluates methods of disease and pest control with an investigation of natural and chemical measures. Provides field experience in pest and disease management. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

**Hospitality Management****HRI 101-102 (3 CR.) (3 CR.)****Hotel-Restaurant Organization and Management I-II**

Introduces the history, opportunities, problems, and trends of the hospitality industry. Covers the organization of the various sectors of the hospitality industry including human resources, general business considerations, and management theory. Lecture 3 hours per week.

- HRI 103 (3 CR.) Introduction to Meeting Planning**  
Focuses on basic aspects and skills involved in planning and managing meetings and conventions. Covers the entire spectrum of the meeting industry, treating all aspects with a broad approach. Emphasizes types of meetings, meeting markets, industry suppliers and affiliates, budget and program planning, site selection and contract negotiations, registration and housing, food and meeting functions, audiovisual and signage requirements, and post-meeting analysis. Lecture 3 hours per week.
- HRI 104 (3 CR.) Introduction to Association Management**  
Focuses on the basic management aspects and organizational structures common to the “association” industry. The course will emphasize staff, board, and member relations; standing and special interest committees; legal and political considerations; communications; finance; and other pertinent areas. Lecture 3 hours per week.
- HRI 106–107 (3 CR.) (3 CR.) Principles of Culinary Arts I–II**  
Introduces the fundamental principles of food preparation and basic culinary procedures. Stresses the use of proper culinary procedures combined with food science, proper sanitation, standards of quality for food items that are made, and proper use and care of kitchen equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
- HRI 120 (4 CR.) Principles of Food Preparation**  
Applies scientific principles and techniques to the preparation of food, including carbohydrates, such as fruits, vegetables, sugars, and starches; fats, including both animal and vegetable, as well as natural and manufactured; and proteins, such as milk, cheese, eggs, meats, legumes, fish, and shellfish. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- HRI 126 (1 CR.) The Art of Garnishing**  
Focuses on the relationship between colors and shapes and how they pertain to garnishes. Provides student with knowledge to create impressive presentations. Lecture 1 hour per week.
- HRI 128 (3 CR.) Principles of Baking**  
Instructs the student in the preparation of breads, pastries, baked desserts, candies, frozen confections, and sugar work. Applies scientific principles and techniques of baking. Promotes the knowledge/skills required to prepare baked items, pastries, and confections. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- HRI 138 (3 CR.) Commercial Food Production Management**  
Prerequisite: HRI 120 or approval of instructor. Teaches commercial cooking. Studies management’s role in setting up and running commercial cooking operations, menu planning, menu evaluation, standardization of recipes, and scheduling of manpower. Lecture 3 hours per week.
- HRI 145 (3 CR.) Garde Manger**  
Studies garde manger, the art of decorative cold food preparation and presentation. Provides a detailed practical study of cold food preparation and artistic combination and display of cold foods. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- HRI 150 (3 CR.) Introduction to Hospitality Ownership**  
Presents growth, development, present status, and trends of the food and lodging industry. Includes special problems of operating small and medium sized establishments. Introduces credit and accounting procedures, management of staff, marketing, advertising, and security, as well as personal attitudes, qualifications, and ethics. Lecture 3 hours per week.
- HRI 158 (3 CR.) Sanitation and Safety**  
Covers the moral and legal responsibilities of management to insure a sanitary and safe environment in a food service operation. Emphasizes the causes and prevention of food-borne illnesses in conformity with federal, state and local guidelines. Focuses on OSHA standards in assuring safe working conditions. Lecture 3 hours per week.
- HRI 160 (3 CR.) Executive Housekeeping**  
Studies the housekeeping department with emphasis on organization, staffing and scheduling, staff development, work methods improvements, equipment, cleaning materials and cleaning procedures; maintenance and refurbishing; room design and safety engineering. Lecture 3 hours per week.
- HRI 215 (3 CR.) Food Purchasing**  
Presents the method and procedures for purchasing food for hotels, restaurants, and institutions. Deals with markets, federal and trade grades, governmental regulations, packaging, comparative versus price buying, yields, and quality control. Lecture 3 hours per week.

**HRI 225 (3 CR.)****Menu Planning and Dining Room Service**

Covers fundamentals of menu writing, types of menus, layout, design, and food merchandising, and interpreting a profit and loss statement as it relates to menu pricing. Analyzes menus for effectiveness. Instructs on proper dining room service, customer seating, and dining room management. Emphasizes use of computer in management of food service operations. Lecture 3 hours per week.

**HRI 229 (3 CR.)****Principles of Meeting Planning**

Prerequisite: HRI 103. Focuses on planning and managing meetings. Examines entire sequence of events, from conceptual stage of first meeting plan through completion of the event. Emphasizes technical planning skills including site selection, negotiating with suppliers, meeting specifications, preparation, budgeting, special event planning, and working with facility staff to manage a successful meeting. Lecture 3 hours per week.

**HRI 230 (3 CR.)****Exhibition Management**

Prerequisite: HRI 229 or meeting management experience. Studies management of trade shows and expositions. Addresses the basic structure of exhibit organizations, attendee and exhibitor needs, purposes and types of shows, facilities, promotion, trends, and employment opportunities. Lecture 3 hours per week.

**HRI 231 (3 CR.)****Principles of Event Planning and Management**

Focuses on the detailed aspects of how to produce, stage, script, and manage special events within the context of achieving organizational goals. Emphasizes the five critical stages in planning and managing special events: research needs and make goal assessments; design events to meet organizational purposes; planning the effective event; coordination and on-site management; and post-event evaluation. Lecture 3 hours per week.

**HRI 232 (3 CR.)****Meeting and Exhibition Law and Ethics**

Prerequisite: HRI 229 or meeting planning or trade show work experience. Focuses on legal principles and precedents and ethical considerations as they apply to exposition and convention management. Reviews laws dealing with letters of agreement, contracts, torts, and other considerations peculiar to the meeting and exhibition industry. Covers legal and ethical aspects regarding tax, intellectual property, insurance, employment, antitrust, and liquor liability. Lecture 3 hours per week.

**HRI 233 (3 CR.)****Meeting and Exhibition Marketing**

Prerequisite: HRI 229 or meeting planning experience. Examines all the major marketing tools used to attract attendees to an event, promote seminar attendance, and sell booth space to exhibitors at a trade show or exposition. Concentrates on the fundamentals of marketing that will enable the meeting manager to practice a total marketing approach including research, planning, budgeting, direct mail, advertising, public relations, direct selling, and sales promotion. Lecture 3 hours per week.

**HRI 235 (3 CR.)****Marketing of Hospitality Services**

Studies principles and practices of marketing the services of the hotel and restaurant industry. Emphasizes the marketing concept with applications leading to customer satisfaction. Reviews methods of external and internal stimulation of sales. May include a practical sales/marketing exercise and computer applications. Lecture 3 hours per week.

**HRI 245 (3 CR.)****Labor Cost Control**

Focuses on position analysis and description. Considers employee scheduling, forecasting, and staffing needs as related to sales for the labor intensive hospitality industry. Covers interpretation and analysis of payroll to maximize efficiency and productivity. Uses problem-solving techniques to illustrate payroll procedures. Includes explanation of payroll deductions, tip credits, and tip-sales allocation. Lecture 3 hours per week.

**HRI 251 (3 CR.)****Food and Beverage Cost Control I**

Presents methods of pre-cost and pre-control as applied to the menu, purchasing, receiving, storing, issuing, production, sales, and service which result in achievement of an operation's profit potential. Emphasizes both manual and computerized approaches. Lecture 3 hours per week.

**HRI 255 (3 CR.)****Human Resources Management and Training for Hospitality and Tourism**

Prepares the students for interviewing, training, and developing employees. Covers management skills (technical, human, and conceptual) and leadership. Covers the establishment and use of effective training and evaluative tools to improve productivity. Emphasizes staff and customer relations. Lecture 3 hours per week.

**HRI 256 (3 CR.)  
Principles and Applications of Catering**

Prerequisite: HRI 138 or approval of instructor. Analyzes and compares the principles of on-premise and off-premise catering. Includes student presentations in a series of catered functions where they assume typical managerial/employee positions emphasizing planning, organizing, operating, managing, and evaluating. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**HRI 265 (3 CR.)  
Hotel Front Office Operations**

Analyzes hotel front office positions and the procedures involved in reservation registration, accounting for and checking out guests, and principles and practices of night auditing. Covers the complete guest operation in both traditional and computerized operations. Lecture 3 hours per week.

**HRI 270 (3 CR.)  
Strategic Lodging Management**

Prerequisites: HRI 101, HRI 102, or instructor's approval. Presents lodging management principles, focusing on strategic planning as the foundation for operational effectiveness. Synthesizes management practices which can be used by entry-level, mid-level, and executive management. Lecture 3 hours per week.

**HRI 275 (3 CR.)  
Hospitality Law**

Studies legal principles governing hospitality operations. Includes applications of common law and statutory decisions, discussion of legal theory, and regulations governing management of hospitality enterprise. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Human Services

**HMS 100 (3 CR.)  
Introduction to Human Services**

Introduces human service agencies, roles, and careers. Presents a historical perspective of the field as it relates to human services today. Additional topics include values clarification and needs of target populations. Lecture 3 hours per week.

**HMS 109 (3 CR.)  
Structured Career Planning in Human Services**

Overviews human services as a career field. Teaches career development skills for personal career planning and for use with clients. Includes nine-hour

computer component (word processing). Lecture 3 hours per week.

**HMS 121 (3 CR.)  
Basic Counseling Skills I**

Develops skills needed to function in a helping relationship. Emphasizes skills in attending, listening, and responding. Clarifies personal skill strengths, deficits, and goals for skill improvement. Lecture 3 hours per week.

**HMS 141 (3 CR.)  
Group Dynamics I**

Examines the stages of group development, group dynamics, the role of the leader in a group, and recognition of the various types of group processes. Discusses models of group dynamics that occur as a result of group membership dynamics. Lecture 3 hours per week.

**HMS 142 (3 CR.)  
Group Dynamics II**

Examines group dynamics, group leadership, group cohesion, transference, and group helping through experiential involvement in group facilitating and leadership. Increases group skills through active classroom participation in group experiences. Lecture 3 hours per week.

**HMS 145 (3 CR.)  
Effects of Psychoactive Drugs**

Provides information on the biochemical, physiological, and behavioral aspects of substance addiction and reviews the symptoms of addiction. Emphasizes areas of chemical dependency, medical epidemiology, physiological threats of addiction, and methods of identifying multiple drug abusers. Lecture 3 hours per week.

**HMS 251 (3 CR.)  
Substance Abuse I**

Provides knowledge, skills, and insight for working in drug and alcohol abuse programs. Emphasizes personal growth and client growth measures in helping relationships. Stresses various methods of individual and group techniques for helping the substance abuser. Lecture 3 hours per week.

**HMS 252 (3 CR.)  
Substance Abuse II**

Prerequisite: HMS 251. Expands knowledge and skill in working with the substance abuser. Focuses on assisting substance abusers in individual and group settings and explores client treatment modalities. May provide opportunities for field experience in treatment centers. Lecture 3 hours per week.



**HMS 258 (3 CR.)****Case Management and Substance Abuse**

Focuses on the process for interviewing substance abuse clients. Includes intake, assessment, handling denial, and ending the interview. Teaches skills for writing short-term goals and treatment plans with emphasis on accountability. Examines various reporting devices. Lecture 3 hours per week.

**HMS 266 (3 CR.)****Counseling Psychology**

Studies major counseling theories, their contributions and limitations, and the application of each to a counseling interaction. Students develop their own personal counseling theory. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Humanities

**HUM 165 (3 CR.)****Controversial Issues in Contemporary American Culture**

Introduces students to selected issues in contemporary American culture. Includes topic areas ranging from welfare reform, economic development, privacy, environmental protection and conservation, evolution vs. creation, to family values, and special interest lobbying in our state and national governments. Focuses on the development of the student's critical thinking skills by analyzing, evaluating, and reflecting on opposite sides of the same issue as expressed by public leaders, special interest groups, and academicians. Lecture 3 hours per week.

**HUM 201 (3 CR.)****Survey of Western Culture I**

Studies thought, values, and arts of Western culture, integrating major developments in art, architecture, literature, music, and philosophy. Covers the following periods: Ancient and Classical, Early Christian and Byzantine, Medieval, and Early Renaissance. Lecture 3 hours per week.

**HUM 202 (3 CR.)****Survey of Western Culture II**

Studies thought, values, and arts of Western culture, integrating major developments in art, architecture, literature, music, and philosophy. Covers the following periods: Renaissance, Baroque, Enlightenment, Romantic, and Modern. Lecture 3 hours per week.

**HUM 210 (3 CR.)****Introduction to Women in Humanities**

Prerequisite: ENG 111. Introduces interdisciplinary and cross-cultural theories that explore gender, race, and class issues relating to women's lives, past and present. Lecture 3 hours per week.

**HUM 220 (3 CR.)****Introduction to African-American Studies**

Presents an interdisciplinary approach to the study of African-American life, history, and culture. Examines specific events, ideologies, and individuals that have shaped the contours of African-American life. Studies the history, sociology, economics, religion, politics, psychology, creative productions, and culture of African-Americans. Lecture 3 hours per week.

**HUM 241-242 (3 CR.) (3 CR.)****Interdisciplinary Principles of the Humanities I-II**

Integrates unifying principles of the humanities and related fields of study. Emphasizes the expansion of student's intellectual perspective and development of concepts enabling the integration of knowledge from diverse fields into a unified whole. Lecture 3 hours per week.

**HUM 259 (3 CR.)****Greek Mythology**

Surveys and analyzes major stories from Greek mythology. Explores psychological, anthropological, and historical interpretations of the myths. Acquaints students with recurring mythological themes in language, art, music, and literature. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Industrial Engineering Tech

**IND 123 (1 CR.)****Intro to Lean Manufacturing and Six Sigma**

Covers basic Lean and Six Sigma concepts. Examines the importance of Lean and Six Sigma as pertaining to the world of manufacturing. Provides students with the opportunity to demonstrate the impact of Lean and Six Sigma manufacturing environment. Lecture 1 hour, Total 1 hour per week.

**IND 137** (3 CR.)  
**Team Concepts in Problem Solving**

Studies team concepts and problem solving techniques to assist project teams in improving quality and productivity. Provides knowledge of how to work as a team, plan and conduct good meetings, manage logistics and details, gather useful data, communicate the results and implement changes. Lecture 3 hours per week.

**Instrumentation**

**INS 230** (3 CR.)  
**Instrumentation I**

Prerequisite: ETR 113 and ETR 144. Presents the fundamental scientific principles of process control including temperature, pressure, level, and flow measurements. Topics include transducers, thermometers, and gauges are introduced along with calibration. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**INS 233** (4 CR.)  
**Process Control Integration**

Prerequisite: INS 230 and ELE 233. Presents computer automation including PLCs, SCADA, and PC-based systems to control processes. Topics such as PLC control and computer data acquisition are introduced where students will use existing systems or build systems and control these systems with PLCs and computer data acquisition systems. Assesses students through test and project evaluations and the course will be assessed by graduate feedback. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Information Technology and Database Design**

**ITD 110** (3 CR.)  
**Web Page Design I**

Stresses a working knowledge of website designs, construction, and management using HTML or XHTML. Includes headings, lists, links, images, image maps, tables, forms, and frames. Lecture 3 hours per week.

**ITD 132** (3 CR.)  
**Structured Query Language**

Prerequisite: ITE 115. Incorporates a working introduction to commands, functions, and operators used in SQL for extracting data from standard databases. Lecture 3 hours per week.

**ITD 134** (3 CR.)  
**PL/SQL Programming**

Prerequisite: ITD 132. Presents a working introduction to PL/SQL programming within the Oracle RDBMS environment. Includes PL/SQL fundamentals of block program structure; variables; cursors and exceptions; and creation of program units of functions, triggers, procedures, and packages. Lecture 3 hours per week.

**ITD 210** (3 CR.)  
**Web Page Design II**

Prerequisite: ITD 110. Incorporates advanced techniques in website planning, design, usability, accessibility, advanced site management, and maintenance utilizing web editor software(s). Lecture 3 hours per week.

**ITD 252** (3 CR.)  
**Database Backup and Recovery**

Prerequisite: ITD 152. Concentrates instruction in the key tasks required to plan and implement a database backup and recovery strategy. Includes instruction in multiple strategies to recover from multiple types of failure. Lecture 3 hours per week.

**ITD 256** (3 CR.)  
**Advanced Database Management**

Prerequisite: ITE 115. Focuses in-depth instruction in the handling of critical tasks of planning and implementing large databases. Includes an introduction to concepts of advanced data warehousing and database configuration. Lecture 3 hours per week.

**ITD 258** (3 CR.)  
**Database Performance and Tuning**

Prerequisite: ITD 250. Emphasizes instruction to optimize the performance of a database management system. Course content includes methods for tuning data access and storage and discussions of resolving data performance problems. Lecture 3 hours per week.

**ITD 260** (3 CR.)  
**Data Modeling and Design**

Prerequisite: ITE 115. Introduces life cycle application development methodologies in a systematic approach to developing relational databases and designing applications. Presents content introducing functional and business process modeling, using modeling information to produce application designs, analyzing data requirements as entities, attributes, and relationships and map an entity relationship diagram to an initial database design. Identifies the available automated development tools and utilizes Oracle Developer software to perform practical applications of these concepts. Lecture 3 hours per week.

## Information Technology Essentials

### **ITE 100 (3 CR.)**

#### **Introduction to Information Systems**

Covers the fundamentals of computers and computing and topics that include impact of computers on society, ethical issues, and terminology. Provides discussion about available hardware and software as well as their application. Lecture 3 hours per week.

### **ITE 115 (3 CR.)**

#### **Introduction to Computer Applications and Concepts**

Recommended prerequisite: keyboarding skills. Covers computer concepts and Internet skills and uses a computer software suite that includes word processing, spreadsheet, database, and presentation software to demonstrate skills required for computer literacy. Lecture 3 hours per week.

### **ITE 140 (3 CR.)**

#### **Spreadsheet Software I**

Covers the use of spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Topics will include how to type and edit text in a cell, enter data on multiple worksheets, work with formulas and functions, create charts, pivot tables, and styles, insert headers and footers, and filter data. Covers MOS Excel objectives. Lecture 3 hours per week.

### **ITE 150 (3 CR.)**

#### **Desktop Database Software**

Incorporates instruction in planning, defining, and using a database; performing queries; producing reports; working with multiple files; and concepts of database programming. Course topics include database concepts, principles of table design and table relationships, entering data, creating and using forms, using data from different sources, filtering, creating mailing labels. Covers MOS Access certification objectives. Lecture 3 hours per week.

### **ITE 170 (3 CR.)**

#### **Multimedia Software**

Prerequisite: ITE 115. Explores technical fundamentals of creating multimedia projects with related hardware and software. Students will learn to manage resources required for multimedia production and evaluation and techniques for selection of graphics and multimedia software. Lecture 3 hours per week.

### **ITE 180 (3 CR.)**

#### **Help Desk Support Skills**

Prerequisite: ITE 115. Emphasizes instruction in customer support techniques required for analyzing and coordinating software and hardware solutions

for end-user needs. Includes evaluation and communication techniques required to provide help desk support necessary to transfer knowledge and achieve a solution. Lecture 3 hours per week.

### **ITE 181 (3 CR.)**

#### **Technical Training Principles**

Provides instruction in training principles related to technology with an emphasis on methods of training and resource development. Requires development of a technical training lesson using instructor-led training and/or computer-based training. This course includes discussion on latest trends in training. Lecture 3 hours per week.

### **ITE 182 (3 CR.)**

#### **User Support/Help Desk Principles**

Prerequisite: ITE 180. Introduces a variety of tools and techniques that are used to provide user support in help desk operations. Includes help desk concepts, customer service skills, troubleshooting problems, writing for end users, help desk operations and software, needs analysis, facilities management, and other topics related to end user support. Lecture 3 hours per week.

### **ITE 221 (3 CR.)**

#### **PC Hardware and OS Architecture**

Prerequisites: ITE 115 and placement in MTH 154 or higher. Covers instruction about processors, internal functions, peripheral devices, computer organization, memory management, architecture, instruction format, and basic OS architecture. Lecture 3 hours per week.

## Information Technology Networking

### **ITN 100 (3 CR.)**

#### **Introduction to Telecommunications**

Prerequisite or corequisite: ITE 115. Surveys data transmission systems, communication lines, data sets, network, interfacing, protocols, and modes of transmission. Emphasizes network structure and operation. Lecture 3 hours per week.

### **ITN 101 (3 CR.)**

#### **Introduction to Network Concepts**

Prerequisite or corequisite: ITE 115. Provides instruction in networking media, physical and logical topologies, common networking standards and popular networking protocols. Emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Includes selected topics in network implementation, support, and LAN/WAN connectivity. Lecture 3 hours per week.

<p><b>ITN 106</b> <b>Microcomputer Operating Systems</b> Teaches use of operating system utilities and multiple-level directory structures, creation of batch files, and configuration of microcomputer environments. May include a study of graphic user interfaces. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>	<p><b>ITN 157</b> <b>WAN Technologies: Cisco</b> Prerequisite: ITN 156. Concentrates on an introduction to Wide Area Networking (WANs). Includes WAN design, LAPB, Frame Relay, ISDN, HDLC, and PPP. Lecture 4 hours per week.</p>	<p><b>(4 CR.)</b></p>
<p><b>ITN 107</b> <b>Personal Computer Hardware and Troubleshooting</b> Includes specially designed instruction to give students a basic knowledge of hardware and software configurations. Includes the installation of various peripheral devices as well as basic system hardware components. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>	<p><b>ITN 170</b> <b>Linux System Administration</b> Prerequisite: ITE 115. Focuses instruction on the installation, configuration, and administration of the Linux operating system and emphasizes the use of Linux as a network client and workstation. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>
<p><b>ITN 120</b> <b>Wireless: Network Administration (W-NA)</b> Prerequisite: ITN 100 or ITN 101. Corequisite: ITN 101. Provides instruction in fundamentals of radio frequency and spread spectrum technology and wireless networking systems implementation and design. Includes radio frequency and spread spectrum concepts, 802.11 standards and regulations, wireless network architecture, topology, software, equipment, OSI Model, site surveys, security features, and the design and implementation of wireless network solutions. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>	<p><b>ITN 171</b> <b>UNIX I</b> Prerequisite: ITE 115. Provides an introduction to UNIX operating systems. Teaches login procedures, file creation, UNIX file structure, input/output control, and the UNIX shell. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>
<p><b>ITN 154</b> <b>Networking Fundamentals: Cisco</b> Provides introduction to networking using the OSI reference model. Includes data encapsulation, TCP/IP suite, routing, IP addressing, and structured cabling design and implementation. Lecture 4 hours per week.</p>	<p><b>(4 CR.)</b></p>	<p><b>ITN 200</b> <b>Administration of Network Resources</b> Prerequisite: ITN 100 or ITN 101. Students must be able to read and write at a college level. Focuses on the management of local area network servers. Teaches proper structuring of security systems. Explains print queues, disk management, and other local area network (LAN) issues. Presents concerns and issues for the purchase and installation of hardware and software upgrades. Can be taught using any network operating system or a range of operating systems as a delivery tool. Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>
<p><b>ITN 155</b> <b>Introductory Routing: Cisco</b> Prerequisite: ITN 154. Features an introduction to basic router configuration using Cisco IOS software. Includes system components, interface configuration, IP network design, troubleshooting techniques, configuration and verification of IP addresses, and router protocols. Lecture 4 hours per week.</p>	<p><b>(4 CR.)</b></p>	<p><b>ITN 208</b> <b>Protocols and Communications TCP/IP</b> Prerequisite: ITN 100 or ITN 101. Centers on providing an understanding of the TCP/IP suite and the details of its implementation, which are treated by discussing IP addressing, the structure of frames, and protocol headers that enable communication between two computers. Discusses IP routing, tunneling, SNMP, and security. Lecture 4 hours per week.</p>	<p><b>(4 CR.)</b></p>
<p><b>ITN 156</b> <b>Basic Switching and Routing: Cisco</b> Prerequisite: ITN 155. Centers instruction in LAN segmentation using bridges, routers, and switches. Includes fast Ethernet, access lists, routing protocols, spanning tree protocol, virtual LANs, and network management. Lecture 4 hours per week.</p>	<p><b>(4 CR.)</b></p>	<p><b>ITN 213</b> <b>Information Storage and Management</b> Focuses on advanced storage systems, protocol, and architectures including Storage Area Networks (SAN), Network Attached Storage (NAS), Fibre Channel Networks, Internet Protocol SANs (IPSAN), iSCSI, and Content Addressable Storage (CAS). Lecture 3 hours per week.</p>	<p><b>(3 CR.)</b></p>

**ITN 245 (3 CR.)****Network Troubleshooting**

Prerequisite: ITN 100 or ITN 101. Students must be able to read and write at a college level. Focuses on servicing and maintaining local area networks (LANs). Teaches network installation, network troubleshooting, installation of file servers and workstations, configuring of network boards and cables, and diagnosing common network problems. Lecture 3 hours per week.

**ITN 254 (4 CR.)****Virtual Infrastructure: Installation and Configuration**

Explores concepts and capabilities of virtual architecture with a focus on the installation, configuration, and management of a virtual infrastructure, ESX Server, and Virtual Center. Covers fundamentals of virtual network design and implementation, fundamentals of storage area networks, virtual switching, virtual system management, and engineering for high availability. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**ITN 255 (4 CR.)****Virtual Infrastructure: Deployment, Security, and Analysis**

Focuses on the deployment, security, and analysis of the virtual infrastructure, including scripted installations, advanced virtual switching for security, server monitoring for health and resource management, high-availability management, system backups, and fault analysis. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**ITN 257 (3 CR.)****Cloud Computing: Infrastructure and Services**

Focuses on cloud infrastructure, deployment, security models, and the key considerations in migrating to cloud computing. Covers the technologies and processes required to build traditional, virtualized, and cloud data center environments, including computation, storage, networking, desktop and application virtualization, business continuity, security, and management. Lecture 3 hours. Total 3 hours per week.

**ITN 260 (3 CR.)****Network Security Basics**

Prerequisites: ITN 100 and ITN 101 or networking/network protocols knowledge. Explores the basics of network security in depth. Includes security objectives, security architecture, security models, and security layers. Discusses risk management, network security policy, and security training.

Discusses the five security keys: confidentiality, integrity, availability, accountability, and auditability. Lecture 3 hours per week.

**ITN 261 (4 CR.)****Network Attacks, Computer Crime, and Hacking**

Prerequisite: ITN 260 or instructor's permission. Provides an in-depth exploration of various methods for attacking and defending a network. Explores network security concepts from the point of view of hackers and their attack methodologies. Discusses hackers, attacks, Intrusion Detection Systems (IDS), malicious code, computer crime, and industrial espionage. Lecture 4 hours per week.

**ITN 262 (4 CR.)****Network Communication, Security, and Authentication**

Prerequisite: ITN 260 or instructor's permission. Provides an in-depth exploration of various communication protocols with a concentration on TCP/IP. Explores communication protocols from the point of view of the hacker in order to highlight protocol weaknesses. Discusses Internet architecture, routing, addressing, topology, fragmentation, and protocol analysis. Includes the use of various utilities to explore TCP/IP. Lecture 4 hours per week.

**ITN 263 (4 CR.)****Internet/Intranet Firewalls and E-Commerce Security**

Prerequisite: ITN 260 or instructor's permission. Provides an in-depth exploration of firewalls, web security, and e-commerce security. Explores firewall concepts, types, topology, and the firewall's relationship to the TCP/IP protocol. Explores client/server architecture, the web server, HTML, and HTTP in relation to web security. Discusses digital certification, 7D.509, and Public Key Infrastructure (PKI). Lecture 4 hours per week.

**ITN 266 (3 CR.)****Network Security Layers**

Prerequisite: ITN 260 or instructor's permission. Provides an in-depth exploration of various security layers needed to protect the network. Explores network security from the point of view of the environment in which the network operates and the necessity to secure that environment in order to lower the risk to the network. Discusses physical security, personnel security, operating system security, software security, and database security. Lecture 3 hours per week.



**ITN 267 (3 CR.)  
Cyberlaw**

Provides an in-depth exploration of the civil and common law issues that apply to network security. Explores statutes, jurisdictional and constitutional issues related to computer crime and privacy. Discusses rules of evidence, seizure and evidence handling, court presentation, and computer privacy in the digital age. Lecture 3 hours per week.

**ITN 270 (3 CR.)  
Advanced Linux Network Administration**

Prerequisite: ITN 170. Focuses instruction on the configuration and administration of the Linux operating system as a network server. Emphasizes the configuration of common network services such as routing, http, DNS, DHCP, ftp, telnet, SMB, NFS, and NIS. Lecture 3 hours per week.

**ITN 276 (3 CR.)  
Computer Forensics I**

Prerequisites: ITN 106 and ITN 107. Corequisite: ITN 260. Teaches computer forensic investigation techniques for collecting computer-related evidence at the physical layer from a variety of digital media, (hard drives, compact flash, and PDAs) and performing analysis at the file system layer. Lecture 3 hours per week.

**ITN 277 (3 CR.)  
Computer Forensics II**

Prerequisite: ITN 276. Develops skills in the forensic extraction of computer evidence at a logical level using a variety of operating systems and applications (i.e. e-mail), and learn techniques for recovering data from virtual memory, temporary Internet files, and intentionally hidden files. Lecture 3 hours per week.

## Information Technology Programming

**ITP 100 (3 CR.)  
Software Design**

Prerequisite: Placement in MTH 154 or higher. Introduces principles and practices of software development. Includes instruction in critical thinking, problem solving skills, and essential programming logic in structured and object-oriented design using contemporary tools. Lecture 3 hours per week.

**ITP 112 (4 CR.)  
Visual Basic .NET I**

Prerequisite: ITP 100. Teaches fundamentals of object-oriented programming using Visual Basic .NET and the .NET framework. Emphasizes program construction, algorithm development, coding,

debugging, and documentation of graphical user interface applications. Lecture 4 hours per week.

**ITP 120 (4 CR.)  
Java Programming I**

Prerequisite: ITP 100. Teaches fundamentals of object-oriented programming using Java. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface applications. Lecture 4 hours per week.

**ITP 130 (4 CR.)  
C Programming I**

Prerequisite: ITP 100. Teaches fundamentals of structured programming using C. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console applications. Lecture 4 hours per week.

**ITP 132 (4 CR.)  
C++ Programming I**

Prerequisite: ITP 100. Presents fundamentals of object-oriented programming and design using C++. Course content emphasizes program construction, algorithm development, coding, debugging, and documentation of C++ applications. Lecture 4 hours per week.

**ITP 136 (4 CR.)  
C# Programming I**

Prerequisite: ITP 100. Presents instruction in fundamentals of object-oriented programming and design using C#. Course content emphasizes program construction, algorithm development, coding, debugging, and documentation of applications within the .NET framework. Lecture 4 hours per week.

**ITP 137 (4 CR.)  
Programming IOS Devices**

Prerequisite: ITP 100. Examines object-oriented Objective C design and programming concepts for Mac OS X, iPhone, and iPad. Introduces the tools and APIs for the latest iOS SDK, and how they fit together to build full-featured iOS and Mac OS X applications. Lecture 4 hours per week.

**ITP 165 (4 CR.)  
Gaming and Simulation**

Prerequisite: MTH 154. Corequisite: ITP 100. Introduces students to the concepts and applications of gaming and simulation through the use of gaming and simulation tools, as well as through basic programming skills. Lecture 4 hours per week.

**ITP 170 (3 CR.)****Project Management**

Introduces the concepts of project management as defined by the Project Management Institute, the accreditation body for project management. Lecture 3 hours per week.

**ITP 220 (4 CR.)****Java Programing**

Prerequisites: ITP 120. Imparts instruction in application of advanced object-oriented techniques to application development using Java. Emphasizes database connectivity, inner classes, collection classes, networking, and threads. Lecture 4 hours per week.

**ITP 225 (4 CR.)****Web Scripting Languages**

Prerequisites: ITP 100 and ITD 110. Introduces students to the principles, systems, and tools used to implement web applications. Provides students with a comprehensive introduction to the programming tools and skills required to build and maintain interactive websites. Students will develop web applications utilizing client-side and server-side scripting languages along with auxiliary tools needed for complete applications. Lecture 4 hours per week.

**ITP 226 (4 CR.)****Mobile Java Development**

Prerequisite: ITP 100. Provides the necessary design and programming skills required for developing applications on mobile devices (smartphones, tablets, etc.). Utilize the Java-based Android Development Kit to create Android applications, from concept to business model to final product. Lecture 4 hours per week.

**ITP 230 (4 CR.)****C Programming II**

Prerequisite: ITP 130. Teaches advanced structured techniques to application development using C. Emphasizes database structures, database connectivity, and operating system components. Lecture 4 hours per week.

**ITP 234 (4 CR.)****Visual C++ Programming II**

Prerequisite: ITP 134. Instruction in advanced concepts of foundation classes for graphical user interfaces. Lecture 4 hours per week.

**ITP 236 (4 CR.)****C# Programming II**

Prerequisite: ITP 136. Focuses instruction on advanced object-oriented techniques using C# for application development. Emphasizes database

connectivity and networking using the .NET Framework. Lecture 4 hours per week.

**ITP 244 (4 CR.)****ASP.NET: Server-Side Programming**

Prerequisite: ITP 112 or ITP 136. Provides instruction in creation of ASP.NET web applications to deliver dynamic content to a website utilizing server controls, web forms, and web services to accomplish complex data access tasks. Lecture 4 hours per week.

**ITP 246 (4 CR.)****Java: Server-Side Programming**

Prerequisite: ITP 120. Provides instruction in application and integration of web-based clients and server-side Java to three-tier business applications. Course content will use tools UML, XML, Java servlets, JSPs, and JDBC database access. Lecture 4 hours per week.

**ITP 251 (3 CR.)****Systems Analysis and Design**

Prerequisite: ITE 115 and ITP 100. Focuses on application of information technologies (IT) to system life cycle methodology, systems analysis, systems design, and system implementation practices. Methodologies related to identification of information requirements, feasibility in the areas of economic, technical, and social requirements, and related issues are included. Software applications may be used to enhance student skills. Lecture 3 hours per week.

**ITP 265 (4 CR.)****Concepts of Simulation**

Expands the application of discrete event simulation and introduces continuous simulation. Develops object-oriented programming techniques. Presents distributed modeling and simulation network communication protocols. Explores the practical applications of distributed simulations in industry. Lecture 4 hours. Total 4 hours per week.

**ITP 270 (4 CR.)****Programming for Cybersecurity**

Prerequisite: ITP 100. Teaches scripting and software development techniques for automating security tasks such as network monitoring and penetration testing using Python. Additional topics include writing custom tools and the basics of developing software exploits. Lecture 4 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Interior Design

### **IDS 100 (3 CR.)**

#### **Theory and Techniques of Interior Design**

Introduces drafting and presentation, color theory, and coordination, space planning, and arrangement of furnishings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **IDS 105 (3 CR.)**

#### **Architectural Drafting for Interior Design**

Prerequisite: IDS 100. Introduces tools and equipment, lettering, methods of construction, designing, and delineation of architecture. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **IDS 106 (3 CR.)**

#### **Three-Dimensional Drawing and Rendering**

Prerequisite: IDS 100. Provides instruction in graphic presentation of three dimensionally drawn interiors. Presents the use of colored media to render 3D drawings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **IDS 109 (3 CR.)**

#### **Styles of Furniture and Interiors**

Prerequisite: ART 101. Teaches history of furnishings and interiors from the ancient world to the present. Lecture 3 hours per week.

### **IDS 205 (3 CR.)**

#### **Materials and Sources**

Prerequisite: IDS 105. Presents textiles, floor and wall coverings, and window treatments. Emphasizes construction, fiber, finish, and code applications. May use research and field trips to trade sources representing these elements. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **IDS 206 (3 CR.)**

#### **Lighting and Furnishings**

Prerequisite: IDS 105. Provides instruction in lighting terminology and calculations and instructions in techniques of recognizing quality of construction in furnishings and related equipment. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **IDS 215 (3 CR.)**

#### **Theory and Research in Commercial Design**

Prerequisites: IDS 105, IDS 106, IDS 205, and IDS 206. Teaches graphic standards and specifications in interior design. Explains handicap codes and fire codes for large-scale spaces. Provides programming and space planning with emphasis on systems furniture. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **IDS 221 (4 CR.)**

#### **Designing Commercial Interiors I**

Prerequisites: IDS 105, IDS 106, IDS 205, IDS 206, and IDS 215. Presents problems in designing and developing presentations with emphasis on retail spaces. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

### **IDS 225 (3 CR.)**

#### **Business Procedures**

Prerequisite: IDS 100. Provides instruction in preparation of contracts, purchase orders, specifications, and other business forms used in the interior design field. Lecture 3 hours per week.

### **IDS 235 (3 CR.)**

#### **Antiques**

Involves research, authentication, and provenance of historic objects. Covers examples of furnishings, fixtures, textiles, glass, and ceramics. May provide field trips, lectures, examination, and discussion to assist in determining age, condition, and other properties. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **IDS 245 (3 CR.)**

#### **Computer Aided Drafting for Interior Designers**

Prerequisites: IDS 100, IDS 105, and ITE 115 or permission of instructor. Provides instruction in the use of computer aided drafting and design software, and architectural and engineering software for developing floor plans, elevations, perspectives, shadowing and lighting, and color applications. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

### **IDS 246 (3 CR.)**

#### **Advanced CADD for Interior Designers**

Introduces advanced methods of designing project spaces in a computer aided design-based program. Includes wire frame construction, skins, lighting the space, fly through, entourage, presentation in various oblique formats as well as one- and two-point perspective views. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **IDS 250 (3 CR.)**

#### **Green Design for Interior Designers**

Introduces interior design solutions that support the environment and can be utilized in new and existing structures. Includes the principles of Green Design and steps in producing design solutions using natural and toxin-free materials. Covers material sources, interior finishes, furnishings and lighting, and their applications. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

## Interpreter Education

Additional sign language courses are listed under American Sign Language (ASL).

### **INT 105–106 (3 CR.) (3 CR.) Interpreting Foundations I–II**

Develops fundamental skills of interpreting, including cognitive processes and intralingual language development in English and ASL. Reviews Process Models of Interpreting, and uses one to analyze interpretations. Develops feedback skills essential to the team interpreting process. Lecture 3 hours per week.

### **INT 107 (3 CR.) Translation Skills**

Prerequisite: INT 105 and ASL 262. Continues developing fundamental skills needed for the task of interpreting targets, comprehending source language (either ASL or English), transferring content into memory store (breaking from original form), restructuring into target language, maintaining message equivalence, conveying implicit and inferred information, and applying appropriate discourse structure. Reviews Process Model of interpreting, and uses it to analyze translations. Further develops feedback skills essential to the team interpreting process. Lecture 3 hours per week.

### **INT 130 (3 CR.) Interpreting: An Introduction to the Profession**

Introduces basic principles and practices of interpreting, focusing on the history of the profession, logistics of interpreting situations, regulatory and legislative issues, resources, and the Code of Ethics. Describes the state quality assurance screening and national certification exam systems, including test procedures. Lecture 3 hours per week.

### **INT 133 (3 CR.) ASL-to-English Interpretation I**

Prerequisite: INT 107. Begins consecutively interpreting monologues from the source language (ASL) to the target language (English). Watch entire ASL monologues, process them, analyze them, then choose appropriate English to match the message. Eventually interpret the monologue into English. Puts interpreting theory into practice in a lab environment. Conducts research in the field of interpretation. Develops team interpreting techniques. Interacts with consumers of ASL–English interpretation. Lecture 3 hours per week.

### **INT 134 (3 CR.) English-to-ASL Interpretation I**

Prerequisite: INT 107. Begins consecutively interpreting monologues from the source language (English) to the target language (ASL). Listen to entire English monologues, process them, analyze them, then choose appropriate ASL to match the message. Puts interpreting theory into practice in a lab environment. Conducts research into the field of interpretation. Develops team interpreting techniques. Encourages interaction with consumers of ASL–English interpretation. Lecture 3 hours per week.

### **INT 141 (3 CR.) Transliterating I**

Prerequisite: ASL 201. Studies the skills required to transmit spoken English into a manual code for English or an interpreting product with more obvious English influences, and vice versa. Introduces a variety of manual codes and their relationship to American Sign Language and Contact Signing. Lecture 3 hours per week.

### **INT 142 (3 CR.) Discourse Analysis**

Prerequisite: ASL 202. Introduces the study of language and communication between Deaf and hearing clients. Focuses on the features of language use and their impact on communication success in American Sign Language and spoken English. Lecture 3 hours per week.

### **INT 233 (3 CR.) ASL-to-English Interpretation II**

Prerequisites: INT 133 and INT 134. Perform simultaneous interpretations of monologues in the source language (ASL) to the target language (English). Process an incoming ASL monologue while simultaneously producing an appropriate interpretation in English. Conduct research in the field of interpretation. Apply team interpreting techniques. Interact with consumers of interpretation. Lecture 3 hours per week.

### **INT 234 (3 CR.) English-to-ASL Interpretation II**

Prerequisites: INT 133 and INT 134. Perform simultaneous interpretations of monologues in the source language (English) into the target language (ASL). Processes an incoming English monologue while simultaneously producing an appropriate interpretation in ASL. Conduct research in the field of interpretation. Apply team interpreting techniques. Interact with consumers of interpretation. Lecture 3 hours per week.

**INT 235 (3 CR.)****Interpreting in the Educational Setting**

Prerequisites: ASL 102 and INT 130. Examines the role, responsibilities, and communication techniques in the educational setting. Provides information on the nature and needs of the Deaf student and methods used in working with students who are Deaf and hard-of-hearing. Describes various communication systems used for a variety of educational environments. Lecture 3 hours per week.

**INT 236 (3 CR.)****Interpreting in Special Situations**

Studies roles, responsibilities, and qualifications involved in interpreting in specific settings, such as medical, legal, conference, religious, and performing arts. Addresses specific linguistic and ethical concerns for each. Lecture 3 hours per week.

**INT 237 (2 CR.)****Interpreting ASL in Safe Settings**

Prerequisites: INT 133 and INT 144. Studies roles, responsibilities, and experiences involved in working community and educational settings, including ethical and business practices. Analyzes the specific linguistic needs of the clients, managing the environment, and resolving ethical concerns for interpreters. Lecture 2 hours per week.

**INT 250 (3 CR.)****Dialogic Interpretation I**

Prerequisites: INT 233 and INT 234. Apply interpreting fundamentals. Interpret dialogs between spoken English and ASL users. Analyze interpretations by using a Process Model of Interpreting. Conduct research. Practice team interpreting skills in an interactive interpreting environment. Prepare for the interactive nature of standard interpreting evaluations. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Instrumentation

**INS 230 (3 CR.)****Instrumentation I**

Presents the fundamental scientific principles of process control including temperature, pressure, level, and flow measurements. Topics include transducers, thermometers, and gauges are introduced along with calibration. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**INS 233 (4 CR.)****Process Control Integration**

Prerequisite: INS 230 and ELE 233. Presents computer automation including PLCs, SCADA, and PC-based systems to control processes. Topics such as PLC control and computer data acquisition are introduced where students will use existing systems or build systems and control these systems with PLCs and computer data acquisition systems. Assesses students through test and project evaluations and the course will be assessed by graduate feedback. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Italian

**ITA 101-102 (4 CR.) (4 CR.)****Beginning Italian I-II**

Prerequisite for ITA 102: ITA 101. Develops the understanding, speaking, reading, and writing of Italian, and emphasizes the structure of the language. Lecture 5 hours per week.

**ITA 103-104 (3 CR.) (3 CR.)****Basic Spoken Italian I-II**

Prerequisite for ITA 104: ITA 103. Teaches oral communication and introduces the student to cultural mores and customs. Recommended for students with no prior instruction in the language. Lecture 3 hours per week.

**ITA 201-202 (3 CR.) (3 CR.)****Intermediate Italian I-II**

Prerequisite for ITA 201: ITA 102 or equivalent. Prerequisite for ITA 202: ITA 201. Continues development of skills of understanding, speaking, reading, and writing of Italian. Classes conducted in Italian. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Japanese

**JPN 101-102 (4 CR.) (4 CR.)****Beginning Japanese I-II**

Prerequisite for JPN 102: JPN 101. Develops the understanding, speaking, reading, and writing of Japanese, and emphasizes the structure of the language. Lecture 5 hours per week.



**JPN 103–104 (3 CR.) (3 CR.)****Basic Spoken Japanese I–II**

Prerequisite for JPN 104: JPN 103. Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

**JPN 201–202 (4 CR.) (4 CR.)****Intermediate Japanese I–II**

Prerequisite: JPN 102. Prerequisite for JPN 202: JPN 201. Continues the development of the skills of understanding, speaking, reading, and writing of Japanese. Classes conducted in Japanese. Lecture 4 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Korean****KOR 101–102 (4 CR.) (4 CR.)****Beginning Korean I–II**

Prerequisite for KOR 102: KOR 101. Introduces understanding, speaking, reading, and writing skills and emphasizes basic Korean sentence structure. Includes an introduction to Korean culture. Lecture 5 hours per week.

**Latin****LAT 101–102 (3 CR.) (3 CR.)****Elementary Latin I–II**

Prerequisite for LAT 102: LAT 101. Teaches Latin grammar and composition. Introduces the translation of Latin literature, with special selections from Caesar and other writers. Lecture 3 hours per week.

**LAT 201–202 (3 CR.) (3 CR.)****Intermediate Latin I–II**

Prerequisites: two years high school Latin or one year college Latin. Prerequisite for LAT 202: LAT 201. Introduces the reading of classical Latin with a review of Latin grammar, forms, and syntax. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Legal/Paralegal Studies****LGL 110 (3 CR.)****Introduction to Law and the Paralegal Assistant**

Introduces various areas of law in which a paralegal assistant may be employed. Includes study of the court system (Virginia and federal), as well as a brief

overview of criminal law, torts, domestic relations, evidence, ethics, role of the legal assistant, and other areas of interest. Lecture 3 hours per week.

**LGL 115 (3 CR.)****Real Estate Law**

Studies law of real property, and gives in-depth survey of more common types of real estate transactions and conveyances such as deeds, contracts, leases, and deeds of trust. Focuses on drafting these various instruments, and studies the system of recording and searching public documents. Lecture 3 hours per week.

**LGL 117 (3 CR.)****Family Law**

Studies elements of a valid marriage, grounds for divorce and annulment, separation, defenses, custody, support, adoptions and applicable tax consequences. Includes property settlement agreements, pre- and ante-nuptial agreements, pleadings and rules of procedure. May include specific federal and Virginia consumer law. Lecture 3 hours per week.

**LGL 125 (3 CR.)****Legal Research**

Provides an understanding of various components of a law library, and emphasizes research skills through the use of digests, encyclopedias, reporter systems, codes, citations, ALR and other research tools. May include research through electronic database, overview of computer applications and writing projects. Lecture 3 hours per week.

**LGL 126 (3 CR.)****Legal Writing**

Requires placement into ENG 111. Studies proper preparation of various legal documents, including case and appeal briefs, legal memoranda, letters, and pleadings. Involves practical applications. Lecture 3 hours per week.

**LGL 127 (3 CR.)****Legal Research and Writing**

Prerequisite: ENG 111 or permission of division. Provides a basic understanding of legal research and the proper preparation of legal documents, including brief writing. Lecture 3 hours per week.

**LGL 200 (1 CR.)****Ethics for the Paralegal**

Examines general principles of ethical conduct applicable to paralegals. Includes the application of rules of ethics to the practicing paralegal. Lecture 1 hour per week.

**LGL 215 (3 CR.)****Torts**

Studies fundamental principles of the law of torts and may include preparation and use of pleadings and other documents involved in the trial of a civil action. Emphasizes intentional torts, negligence, personal injury, products liability, and malpractice cases.

**LGL 217 (3 CR.)****Trial Practice and the Law of Evidence**

Introduces civil and criminal evidence: kinds, degrees, and admissibility of evidence; and methods and techniques of its acquisition. Emphasizes Virginia and federal rules of evidence and procedure. Focuses on elements of a trial and various problems associated with the trial of a civil or criminal case. Lecture 3 hours per week.

**LGL 218 (3 CR.)****Criminal Law**

Focuses on major crimes, their classification, elements of proof, intent, conspiracy, responsibility, parties, and defenses. Emphasizes Virginia and federal law. Gives general principles of applicable constitutional law and criminal procedure. Lecture 3 hours per week.

**LGL 220 (3 CR.)****Administrative Practice and Procedure**

Surveys applicable administrative laws, including the Privacy Act, the Administrative Process Act and Freedom of Information Act. Studies practice and procedure involving the Department of Alcoholic Beverage Control, State Corporation Commission, Virginia Workers' Compensation Commission, Social Security Administration, Virginia Employment Commission and other administrative agencies.

**LGL 225 (3 CR.)****Estate Planning and Probate**

Introduces various devices used to plan an estate, including wills, trusts, joint ownership, and insurance. Considers various plans in light of family situations and estate objectives. Focuses on practices involving administration of an estate, including taxes and preparation of forms. Lecture 3 hours per week.

**LGL 230 (3 CR.)****Legal Transactions**

Presents an in-depth study of general contract law, including formation, breach, enforcement, and remedies. Includes an overview of Uniform Commercial Code provisions governing sales, commercial paper, and collections. Lecture 3 hours per week.

**LGL 234 (3 CR.)****Intellectual Property Law**

Presents outline of federal copyright and federal and state trademark law. Examines the functions of legal assistants in preparing registrations as well as infringement litigation. Covers related areas of law including trade secrecy and differences between various types of intellectual property. Examines the basics of patent law. Lecture 3 hours per week.

**LGL 235 (3 CR.)****Legal Aspects of Business Organizations**

Studies fundamental principles of agency law and the formation of business organizations. Includes sole proprietorships, partnerships, corporations, limited liability companies, and other business entities. Reviews preparation of the documents necessary for organization and operation of business. Lecture 3 hours per week.

**LGL 250 (3 CR.)****Immigration Law**

Provides an introduction to immigration law and policy, giving an overview of the United States legal system that regulates the admission, exclusion, removal, and naturalization of immigrants. Includes issues concerning refugees, asylum seekers, illegal immigrants, and undocumented aliens. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Library Technology

**LBR 105 (1 CR.)****Library Skills for Research**

Introduces students to accessing, retrieving, evaluating, and applying a variety of digital and print information resources. Develops an understanding of the type of information provided in each of the information formats presented: reference, cataloged materials, magazines/journals, newspapers, and Internet sites. Provides background information, available resources, search techniques, sample searches, evaluation guides, and exams in each of the course units. Lecture 1 hour per week.

**LBR 110 (1 CR.)****Effective Internet Searching**

Prerequisite: a satisfactory score on the English proficiency exam. Teaches students how to access, utilize, and evaluate information on the World Wide Web using a variety of search tools. Also teaches students comparative analysis of search tool architecture and how to select the most appropriate tool for their information needs. Lecture 1 hour per week.

**LBR 195 (1–5 CR.)****Topics in: Library Technology**

Exploration of topical areas of interest to or needed by students. May be used also for special Honors courses. May be repeated for credit. Variable hours.

## Marketing

**MKT 200 (3 CR.)****Consumers, Marketing, and Society**

Provides an overview of the marketing system as it applies to the needs and wants of consumers and the purchasing process; considers the role of government in consumer affairs. Assists the individual in becoming an informed consumer and better business manager through an understanding of rights and obligations in consumer transactions. Lecture 3 hours per week.

**MKT 201 (3 CR.)****Introduction to Marketing**

Introduces students to the discipline of marketing and the need to create customer value and customer relationships in the marketplace. Presents an overview of the marketing principles, concepts, management strategies and tactics, along with the analytical tools, used by organizations in the creation of a marketing plan to promote ideas, products, and/or services to selected target groups. Examines entrepreneurial e-marketing practices in today's business environment. Lecture 3 hours per week.

**MKT 215 (3 CR.)****Sales and Marketing Management**

Emphasizes the relationship of professional sales skills and marketing management techniques to successful profit and nonprofit organizations. Focuses on challenges connected with the sales and distribution of products and services, including pricing, promotion, and buyer motivation. Demonstrates uses of the Internet to enhance marketing. Studies legal and ethical considerations. Introduces sales management in planning, organizing, directing, and controlling for a well-coordinated sales effort. Lecture 3 hours per week.

**MKT 216 (3 CR.)****Retail Organization and Management**

Examines the organization of the retail establishment to accomplish its goals in an effective and efficient manner. Includes study of site location, internal layout, store operations, and security. Examines the retailing mix, the buying or procurement process, pricing, and selling. Studies retail advertising, promotion, and publicity as a coordinated effort to increase store traffic. Lecture 3 hours per week.

**MKT 221 (3 CR.)****Public Relations**

Introduces public relations as a marketing activity and focuses on media relations, publicity, strategic planning, public relations research, communication with multiple audiences, and the elements of an effective public relations campaign to influence public opinion. Equips students with the basic skills for writing publicity materials and coordinating media kits. Lecture 3 hours per week.

**MKT 227 (3 CR.)****Merchandise Buying and Control**

Studies the merchandising cycle. Explores techniques used in the development of buying resources, merchandising plans, model stock, unit control, and inventory systems. Highlights merchandise selection, policy pricing strategies, and inventory control methods. Lecture 3 hours per week.

**MKT 228 (3 CR.)****Promotion**

Presents an overview of promotion activities including advertising, visual merchandising, publicity, and sales promotion. Focuses on coordinating these activities into an effective campaign to promote sales for a particular product, business, institution, or industry. Emphasizes budgets, selecting media, and analyzing the effectiveness of the campaign. Lecture 3 hours per week.

**MKT 275 (3 CR.)****International Marketing**

Examines the role of the multinational firm, as well as the environments in which they operate. Covers such factors as exchange rates, government foreign trade policy, and social-cultural factors. Compares international market planning with domestic market planning. Lecture 3 hours per week.

**MKT 282 (3 CR.)****Principles of E-Commerce**

Studies online business strategies, and the hardware and software tools necessary for Internet commerce. Includes the identification of appropriate target segments, the development of product opportunities, pricing structures, distribution channels, and the execution of successful marketing strategies. Lecture 3 hours per week.

**MKT 284****(3 CR.)****Social Media Marketing**

Prerequisite: an understanding of basic marketing, computer and business activities is desirable. Surveys the use of social networks and online communities such as blogs, wikis, and virtual events that allow companies to expand their interaction with customers and develop relationships with collaborative communities. Emphasizes the ongoing transformation of the way companies adjust their marketing plans to improve interaction with customers online. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

### Mathematics: Developmental

Students will study developmental mathematics topics in a technology-based setting to prepare for entrance into college-level mathematics courses and curricula. Students will register for MTT (Mathematics Technology-Based) courses and receive instruction in the developmental math units determined by their placement test results. Credits are not applicable toward graduation.

**BSK 1****(1 CR.)****Whole Numbers**

Covers whole number principles and computations. Credit is not applicable toward graduation. Lecture 1 hour per week.

**MTT 1****(1 CR.)****Developmental Mathematics (Technology-Based) I**

Prerequisite: placement scores requiring the student to complete one developmental math unit. Covers mathematics topics in a technology-based setting to prepare students for the study of college-level mathematics courses and curricula. Designed for the study of one developmental math unit prescribed by the student's placement test results. Credits not applicable toward graduation. Lecture 1 hour per week.

**MTT 2****(2 CR.)****Developmental Mathematics (Technology-Based) II**

Prerequisite: placement scores requiring the student to complete two developmental math units. Covers mathematics topics in a technology-based setting to prepare students for the study of college-level mathematics courses and curricula. Designed for the study of any combination of two developmental math units prescribed by the student's placement test results. Credits not applicable toward graduation. Lecture 2 hours per week.

**MTT 3****(3 CR.)****Developmental Mathematics (Technology-Based) III**

Prerequisite: placement scores requiring the student to complete three developmental math units. Covers mathematics topics in a technology-based setting to prepare students for the study of college-level mathematics courses and curricula. Designed for the study of any combination of three developmental math units prescribed by the student's placement test results. Credits not applicable toward graduation. Lecture 3 hours per week.

**MTT 4****(4 CR.)****Developmental Mathematics (Technology-Based) IV**

Prerequisite: placement scores requiring the student to complete four developmental math units. Covers mathematics topics in a technology-based setting to prepare students for the study of college-level mathematics courses and curricula. Designed for the study of any combination of four developmental math units prescribed by the student's placement test results. Credits not applicable toward graduation. Lecture 4 hours per week.

The following units make up the components of the MTT courses listed above:

### Mathematics

**MTH 9****(4 CR.)****Bundle 6-9 – Exponents, Factoring, Polynomial Equations, Rational Expressions and Equations, Rational Exponents and Radicals, Functions, Quadratic Equations, and Parabolas**

Prerequisite(s): MTE 1-5 or qualifying placement score. Includes performing operations on exponential expressions and polynomials, factoring polynomials, solving polynomial equations, simplifying rational algebraic expressions, solving rational algebraic equations, simplifying radical expressions, using rational exponents, solving radical equations, working with functions in different forms: ordered pair, graph, and equation form. Also introduces quadratic functions, their properties and their graphs. Emphasis should be on learning all the different factoring methods, and solving application problems using polynomial, rational and radical equations. Credit is not applicable toward graduation. Lecture 4 hours. Total 4 hours per week.

**MTH 111 (3 CR.)****Basic Technical Mathematics**

Prerequisites: MTE 1-3 Prereq OR Corequisite: MCR 1. Provides a foundation in mathematics with emphasis in arithmetic, unit conversion, basic algebra, geometry and trigonometry. This course is intended for CTE programs. Lecture 3 hours. Total 3 hours per week.

**MTH 133 (3 CR.)****Mathematics for Health Professions**

Prerequisite(s): Competency in MTE 1-3 as demonstrated through placement or unit completion or equivalent. Presents in context the arithmetic of fractions and decimals, the metric system and dimensional analysis, percent's, ratio and proportion, linear equations, topics in statistics, topics in geometry, logarithms, topics in health professions including dosages, dilutions and IV flow rates. This course is intended for programs in the Health Professions. Lecture 3 hours. Total 3 hours per week.

**MTH 154 (3 CR.)****Quantitative Reasoning**

Prerequisite(s): Competency in MTE 1-5 as demonstrated through placement or unit completion or equivalent or Corequisite: MCR 4. Presents topics in proportional reasoning, modeling, financial literacy and validity studies (logic and set theory). Focuses on the process of taking a real-world situation, identifying the mathematical foundation needed to address the problem, solving the problem and applying what is learned to the original situation. Lecture 3 hours. Total 3 hours per week.

**MTH 155 (3 CR.)****Statistical Reasoning**

Prerequisite: Competency in MTE 1-5 as demonstrated through placement or unit completion. Presents elementary statistical methods and concepts including visual data presentation, descriptive statistics, probability, estimation, hypothesis testing, correlation and linear regression. Emphasis is placed on the development of statistical thinking, simulation, and the use of statistical software. Lecture 3 hours, Total 3 hours per week.

**MTH 161 (3 CR.)****PreCalculus I**

This course has replaced MTH 163 and may be taken for grade replacement of MTH 163. Prerequisite(s): Competency in MTE 1-9 as demonstrated through placement or unit completion or equivalent or Corequisite: MCR 6. Presents topics in power, polynomial, rational, exponential, and logarithmic functions, and systems of equations and inequalities. Credit will not be awarded for both MTH 161, and

MTH 167 or equivalent. Lecture 3 hours. Total 3 hours per week. Lecture 3 hours, Total 3 hours per week.

**MTH 162 (3 CR.)****PreCalculus II**

This course has replaced MTH 164 and may be taken for grade replacement of MTH 164. Prerequisite(s): Placement or completion of MTH 161, or equivalent with a grade of C or better. Presents trigonometry, trigonometric applications including Law of Sines and Cosines and an introduction to conics. Credit will not be awarded for both MTH 162 and MTH 167 or equivalent. Lecture 3 hours. Total 3 hours per week.

**MTH 165 (3 CR.)****Finite Math**

Prerequisite: MTE 1-9 Competency in MTE 1-9 as demonstrated through placement or unit completion or equivalent. Presents topics in systems of equations, matrices, linear programming, mathematics of finance, counting theory, probability, and Markov Chains. Emphasis is placed on the development of mathematical skills that are then applied to business applications and models. Lecture 3 hours. Total 3 hours per week.

**MTH 167 (5 CR.)****PreCalculus with Trigonometry**

This course has replaced MTH 166 and may be taken for grade replacement of MTH 166. Prerequisite(s): Competency in MTE 1-9 as demonstrated through placement or unit completion or equivalent. Presents topics in power, polynomial, rational, exponential, and logarithmic functions, systems of equations, trigonometry, and trigonometric applications, including Law of Sines and Cosines, and an introduction to conics. Credit will not be awarded for both MTH 167, and MTH 161/MTH 162 or equivalent. Lecture 5 hours. Total 5 hours per week.

**MTH 245 (3CR.)****Statistics I**

This course has replaced MTH 241 and may be taken for grade replacement of MTH 241. Prerequisite: Completion of MTH 181, MTH 154, MTH 161 or MTH 165 or equivalent with a grade of C or better. Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing, correlation, and linear regression. Credit will not be awarded for both MTH 155: Statistical Reasoning and MTH 245: Statistics I or equivalent. Part I of a two semester sequence. Lecture 3 hours. Total 3 hours per week.



**MTH 246 (3 CR.)  
Statistics II**

This course has replaced MTH 242 and may be taken for grade replacement of MTH 242. Prerequisite: Completion of MTH 245 or equivalent with a grade of C or better. Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing, correlation, and linear regression. Part II of a two-semester sequence. Lecture 3 hours. Total 3 hours per week.

**MTH 261 (3 CR.)  
Applied Calculus I**

This course has replaced MTH 271 and may be taken for grade replacement of MTH 271. Prerequisite: Completion of MTH 161 or equivalent with a grade of C or better. Introduces limits, continuity, differentiation and integration of algebraic, exponential and logarithmic functions, and techniques of integration with an emphasis on applications in business, social sciences and life sciences. Lecture 3 hours. Total 3 hours per week.

**MTH 262 (3 CR.)  
Applied Calculus II**

This course has replaced MTH 272 and may be taken for grade replacement of MTH 272. Prerequisite: Completion of MTH 261 or equivalent with a grade of C or better. Covers techniques of integration, an introduction to differential equations and multivariable calculus, with an emphasis throughout on applications in business, social sciences and life sciences. Lecture 3 hours. Total 3 hours per week.

**MTH 263 (4 CR.)  
Calculus I**

This course has replaced MTH 173, but grades in MTH 263 do not replace grades in MTH 173. Prerequisite: Completion of MTH 167 or MTH 161/162 or equivalent with a grade of C or better. Presents concepts of limits, derivatives, differentiation of various types of functions and use of differentiation rules, application of differentiation, antiderivatives, integrals and applications of integration. Lecture 4 hours. Total 4 hours per week.

**MTH 264 (4 CR.)  
Calculus II**

This course has replaced MTH 174, but grades in MTH 264 do not replace grades in MTH 174. Prerequisite: Completion of MTH 263 or equivalent with a grade of C or better. Continues the study of calculus of algebraic and transcendental functions including rectangular, polar, and parametric graphing, indefinite and definite integrals, methods of integration, and power series along with applications.

Features instruction for mathematical, physical and engineering science programs. Lecture 4 hours. Total 4 hours per week.

**MTH 265 (4 CR.)  
Calculus III**

This course has replaced MTH 277 and may be taken for grade replacement of MTH 277. Completion of MTH 264: Calculus II or equivalent with a grade of C or better. Focuses on extending the concepts of function, limit, continuity, derivative, integral and vector from the plane to the three dimensional space. Covers topics including vector functions, multivariate functions, partial derivatives, multiple integrals and an introduction to vector calculus. Features instruction for mathematical, physical and engineering science programs. Lecture 4 hours. Total 4 hours per week.

**MTH 266 (3 CR.)  
Linear Algebra**

This course has replaced MTH 285 and may be taken for grade replacement of MTH 285. Prerequisite: Completion of MTH 263 or equivalent with a grade of B or better or MTH 264 or equivalent with a grade of C or better. Covers matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, eigenvalues, and eigenvectors. Features instruction for mathematical, physical and engineering science programs. Lecture 3 hours. Total 3 hours per week.

**MTH 267 (3 CR.)  
Differential Equations**

This course has replaced MTH 291 and may be taken for grade replacement of MTH 291. Prerequisite: Completion of MTH 264 or equivalent with a grade of C or better. Introduces ordinary differential equations. Includes first order differential equations, second and higher order ordinary differential equations with applications and numerical methods. Lecture 3 hours. Total 3 hours per week.

**MTH 281 (3 CR.)  
Introductory Abstract Algebra**

Prerequisite: Completion of MTH 263, Calculus I with a grade of C or better or equivalent. Introduces groups, isomorphisms, fields, homomorphisms, rings, and integral domains. Applicable to some education licensure programs; not intended for STEM majors. Lecture 3 hours. Total 3 hours per week.

**MTH 288 (3 CR.)**  
**Discrete Mathematics**

This course has replaced MTH 286, but grades in MTH 288 do not replace grades in MTH 286. Completion of MTH 263, Calculus I with a grade of C or better or equivalent. Presents topics in sets, counting, graphs, logic, proofs, functions, relations, mathematical induction, Boolean Algebra, and recurrence relations. Lecture 3 credits. Total 3 credits per week.

**Mathematics Corequisite**

**MCR 4 (2 CR.)**  
**Learning Support for Quant Reasoning**

Prerequisite(s): Completion of any three of the MTE modules 1-5 and Corequisite: MTH 154. Provides instruction for students who require minimum preparation for college-level Quantitative Reasoning. Students in this course will be co-enrolled in MTH 154. Credits are not applicable toward graduation and do not replace MTE courses waived. Successful completion of Quantitative Reasoning results in the prerequisite MTE modules being satisfied. Lecture 2 hours. Total 2 hours per week.

**MCR 6 (2 CR.)**  
**Learning Support for PreCalculus I**

Prerequisite(s): Completion of any seven of the MTE modules 1-9 and Corequisite: MTH 161: Precalculus I. Provides instruction for students who require minimum preparation for college-level Precalculus. Students in this course will be co-enrolled in MTH 161. Credits not applicable toward graduation and do not replace MTE courses waived. Successful completion of Precalculus I results in the prerequisite MTE modules being satisfied. Lecture 2 hours. Total 2 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

**Mechanical Engineering Technology**

**MEC 112 (3 CR.)**  
**Processes of Industry**

Analyzes the processes of manufacturing products from materials for industry/engineering. Includes machining casting, forming molding, hot/cold working, chipless machining, and welding. Addresses quality assurance and inspection procedures. Lecture 3 hours per week.

**MEC 118 (3 CR.)**  
**Automated Manufacturing Technology**

Prerequisite: MEC 120 or instructor's permission. Studies numerical control systems. Includes application of numerical control to standard machine tools, numerical control systems, NC coordinate system, APT systems, two-dimensional machine process, three-dimensional machine process, and flexible manufacturing role of robotics in automated manufacturing. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**MEC 140 (3 CR.)**  
**Introduction to Mechatronics**

Presents foundational concepts in mechatronics including analog and digital electronics, sensors, actuators, microprocessors, and microprocessor interfacing to electromechanical systems. Surveys components and measurement equipment used in the design, installation, and repair of mechatronic equipment and circuits. Prerequisite: divisional approval. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**MEC 161 (4 CR.)**  
**Basic Fluid Mechanics: Hydraulics/Pneumatics**

Introduces theory, operation and maintenance of hydraulic/pneumatics devices, and systems. Emphasizes the properties of fluids, fluid flow, fluid statics, and the application of Bernoulli's equation. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**MEC 210 (3 CR.)**  
**Machine Design**

Prerequisites: EGR 130 and MEC 112 or instructor's permission. Studies the design of machine elements for producing and transmitting power. Includes additional material in statics, strength of materials, dynamics, engineering materials, and industrial processes, including lubrication and friction. Emphasizes graphical kinematics of mechanisms, and discusses analytical design of machine components. Requires preparation of weekly laboratory reports. Lecture 3 hours. Total 3 hours per week.

**MEC 230 (3 CR.)**  
**Mechatronics Process Control**

Studies systems integrating mechanical components with electrical components and logic devices used to control manufacturing operations. Surveys electromechanical actuators, sensors, digital to analog conversion, and methods of computer control as related to the managing and monitoring of manufacturing processes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**MEC 255** (3 CR.)  
**Thermodynamics**

Corequisite: MEC 295. Studies the properties of fluids and basic principles of work, energy, and heat. Includes the first and second laws of thermodynamics, processes and cycles, thermal reversibilities and irreversibilities, internal combustion engines, and gas turbines. Lecture 3 hours per week.

**MEC 265** (3 CR.)  
**Fluid Mechanics**

Prerequisite: MTH 166 or instructor's permission. Studies properties of fluids and fluid flow, Bernoulli's theorem, measuring devices, viscosity, and dimensional analysis. Emphasizes pumps, piping, and fluid motors. Lecture 3 hours per week.

**MEC 266** (3 CR.)  
**Application of Fluid Mechanics**

Teaches theory of hydraulic and pneumatic circuits including motors, controls, actuators, valves, plumbing, accumulators, reservoirs, pumps, compressors, and filters. Lecture 3 hours per week.

**MEC 270** (3 CR.)  
**Computation for Engineering Technology**

Presents the use of spreadsheets and Matlab or equivalent to solve a variety of problems in introductory engineering analysis, such as graphing data, unit conversions, simple statistical analysis, sorting, searching and analyzing data, curve fitting, interpolation, solving algebraic equations, logical decisions, evaluating integrals, comparing economic alternatives, and finding optimum solutions. The acquisition and processing of data as well as macro programming in Basic are also covered. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**MEC 295** (1 CR.)  
**Topics in Thermodynamics**

Prerequisite: MTH 115. Corequisite: MEC 255. Provides a computational study in the practical application of thermodynamic and fluid systems concepts. Includes a brief case study of a fluid system and an on-site visit to an operational fluid system plant. Lecture 1 hour per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Medical Laboratory

Enrollment in MDL courses (except MDL 100) is restricted to students program-placed in the Medical Laboratory Program.

**MDL 100** (2 CR.)  
**Introduction to Medical Laboratory Technology**

Introduces the basic principles, techniques, and vocabulary applicable to all phases of medical laboratory technology. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**MDL 101** (3 CR.)  
**Introduction to Medical Laboratory Techniques**

Introduces the basic techniques including design of the healthcare system, ethics, terminology, calculations, venipuncture, and routine urinalysis. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**MDL 105** (3 CR.)  
**Phlebotomy**

Introduces basic medical terminology, anatomy, physiology, components of healthcare delivery, and clinical laboratory structure. Teaches techniques of specimen collection, specimen handling, and patient interactions. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**MDL 106** (4 CR.)  
**Clinical Phlebotomy**

Focuses on obtaining blood specimens, processing specimens, managing assignments, assisting with and/or performing specified tests, performing clerical duties, and maintaining professional communication. Provides supervised learning in college laboratory and/or cooperating agencies. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

**MDL 125** (3 CR.)  
**Clinical Hematology I**

Teaches the cellular elements of blood including blood cell formation and routine hematological procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**MDL 130** (3 CR.)  
**Basic Clinical Microbiology**

Studies classification, theories, techniques, and methods used in basic bacteriology, parasitology and mycology. Emphasizes routine identification. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

- MDL 127 (3 CR.) Hematology**  
Teaches various blood components, how they are obtained and methods of examination. Includes erythrocyte, leukocyte and platelet counts, hemoglobin and hematocrit determinations, normal and abnormal smears. Introduces coagulation screening studies. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.
- MDL 243 (2 CR.) Introduction to Clinical Molecular Diagnostics**  
Prerequisite: division approval. Provides the fundamentals of genetics and inheritance along with an overview of the basic principles of clinical molecular diagnostics. Discusses the use of common molecular techniques in the diagnosis of disease. Lecture 2 hours per week.
- MDL 215 (2 CR.) Immunology**  
Presents the physiological basis of humeral and cell mediated immunity, including the medical and clinical laboratory application of immunological principles. Lecture 2 hours per week.
- MDL 216 (4 CR.) Blood Banking**  
Teaches fundamentals of blood grouping and typing, compatibility testing, antibody screening, component preparation, donor selection, and transfusion reactions and investigation. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.
- MDL 251 (3 CR.) Clinical Microbiology I**  
Teaches handling, isolation and identification of pathogenic microorganisms. Emphasizes clinical techniques of bacteriology, mycology, parasitology and virology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- MDL 260 (2 CR.) Laboratory Instrumentation I**  
Teaches the theory, principles of operation, methodologies, maintenance, and troubleshooting of the more common instrumentation used in the clinical laboratory. Lecture 2 hours Laboratory 1 hour. Total 3 hours per week. 2 credits
- MDL 263 (3 CR.) Clinical Chemistry and Instrumentation III**  
Emphasizes application of chemical theories and principles to perform routines and special chemistries on various types of instrumentations, to evaluate quality control programs, and to associate test results with clinical significance. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- MDL 265 (2 CR.) Advanced Clinical Chemistry**  
Presents principles of current special chemistry techniques. Lecture 2 hours per week.
- MDL 266 (3 CR.) Clinical Chemistry Techniques**  
Prerequisite: completion of MDL 261 with a grade "C" or better and be enrolled in the first year, third semester summer term, of the Medical Laboratory Technology A.A.S. Includes performing of clinical chemistry methodologies and operation of typical instrumentation in a clinical laboratory. Clinical 9 hours per week.
- MDL 276 (3 CR.) Clinical Hematology Techniques**  
Prerequisite: completion of MDL 127 with a grade of "C" or better and be enrolled in the first year, third semester summer term, of the Medical Laboratory Technology A.A.S. Stresses performing hematological and coagulation methods and operation of typical instrumentation in a clinical laboratory. Clinical 9 hours per week.
- MDL 277 (4 CR.) Clinical Blood Banking Techniques**  
Provides training in techniques, procedures, and interpretations in blood banking in a clinical laboratory or simulated laboratory setting. Clinical 12 hours per week.
- MDL 278 (4 CR.) Clinical Microbiology Techniques II**  
Includes performing of techniques, procedures, and identification of microorganisms in a clinical laboratory. Clinical 12 hours per week.
- MDL 281 (1 CR.) Clinical Correlations**  
Teaches students to apply knowledge gained in courses offered in the MDL curriculum using primarily a case history form of presentation. Emphasizes critical thinking skills in the practice of laboratory medicine. Lecture 1 hour per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Music

### **MUS 101-102 (3 CR.) (3 CR.)**

#### **Basic Musicianship I-II**

Provides exercises leading to knowledge and skill in the rudiments of music. Includes rhythmic notation, as well as scales, keys, and intervals along with exercises in sight-reading and ear training. Lecture 3 hours per week.

### **MUS 111-112 (4 CR.) (4 CR.)**

#### **Music Theory I-II**

Discusses elements of musical construction of scales, intervals, triads, and chord progressions. Develops ability to sing at sight and write from dictation. Introduces the analysis of the Bach chorale style. Expands facility with harmonic dictation and enables the student to use these techniques at the keyboard. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

### **MUS 121-122 (3 CR.) (3 CR.)**

#### **Music Appreciation I-II**

Increases the variety and depth of the student's interest, knowledge, and involvement in music and related cultural activities. Acquaints the student with traditional and twentieth-century music literature, emphasizing the relationship music has as an art form with man and society. Increases the student's awareness of the composers and performers of all eras through listening and concert experiences. Lecture 3 hours per week.

### **MUS 130 (1 CR.)**

#### **Overview of the Recording Industry**

Prerequisite: division approval. Introduces and surveys employment opportunities in the commercial music industry. Assists students in defining their professional goals. Lecture 1 hour per week.

### **MUS 131-132 (2 CR.) (2 CR.)**

#### **Class Voice I-II**

Introduces the many aspects of singing from the physical act through the aesthetic experience. The course is designed for the beginning singer who desires vocal improvement, and for the voice major as an addition to and extension of skills and knowledge necessary for artistic development. Introduces appropriate repertoire. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

### **MUS 133-134 (3 CR.) (3 CR.)**

#### **Recording Systems Services I-II**

Introduces the principles of recording systems and recording system designs. Provides the student with theoretical and practical site locations. Includes the study of sound studio design and construction, production costs, and retail distribution. This

general survey course is not applicable to the Music Recording Technology Certificate program. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **MUS 135 (1 CR.)**

#### **Jazz Ensemble**

Consists of performance from standard jazz and American songbook repertoires, including study of ensemble techniques, interpretation, and improvisation. Division approval required. May be repeated for credit. Laboratory 3 hours per week.

### **MUS 136 (1-2 CR.)**

#### **Applied Music: Voice \***

Teaches singing, proper breath control, diction, and development of tone. Studies the standard vocal repertoire. One or two half-hour lessons per week; 4-8 hours practice required. Private lessons are available for either one or two hours of credit per semester. Students may take a one half hour lesson for one credit or a one hour lesson for two credits per week per semester. All courses in applied music may be repeated one time. Music majors may repeat these courses up to 8 hours with special permission.

### **MUS 137 (1-2 CR.)**

#### **Chorus Ensemble \*\***

Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. May be repeated for credit. Laboratory 3-6 hours per week.

### **MUS 138 (2 CR.)**

#### **Small Vocal Ensemble \*\***

Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. May be repeated for credit. Laboratory 6 hours per week.

### **MUS 140 (3 CR.)**

#### **Introduction to Recording Techniques**

Introduces students to the theory of and practices in digital audio. Describes basic background of the history of audio, culminating with hands-on operation of a digital audio workstation (DAW). Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

### **MUS 141-142 (2 CR.) (2 CR.)**

#### **Class Piano I-II**

Offers the beginning piano student activities in learning musical notation, in accomplishing sight-reading skills, and in mastering techniques of keyboard playing. Presents appropriate literature. Open to all students and may be used to fulfill applied minor instrument requirement for music major. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.



- MUS 143** (1 CR.) **Chamber Ensemble**  
 Consists of performance in a select ensemble, designed for high-level, artistic, public performances of major literature strings, winds, brass, percussion, keyboard, and voice. Membership in the chamber ensemble is open to any student who qualifies through audition. May be repeated for credit. Laboratory/rehearsal 3 hours per week.
- MUS 144** (1 CR.) **Jazz Chamber Ensemble**  
 Consists of performance from the standard jazz small group repertoires. Applies ensemble techniques, improvisation, and arranging. Division approval and performing experience required. May be repeated for credit. Laboratory/rehearsal 3 hours per week.
- MUS 145** (1–2 CR.) **Applied Music: Keyboard \***  
 Teaches piano, organ, harpsichord, or synthesizer. Studies the standard repertoire. Private lessons are available for either one or two hours of credit per semester. The length of the lessons will be half hour for one hour credit and one hour for two hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 1–2 half-hour lessons per week, 4–8 hours practice (laboratory) required.
- MUS 146** (1 CR.) **Percussion Ensemble**  
 Consists of performance on a variety of percussion instruments. Studies performance techniques of various percussion instruments and interpretation of percussion parts and scores. May be repeated for credit. Laboratory/rehearsal 3 hours per week.
- MUS 147** (1 CR.) **Applied Music Composition**  
 Teaches the fundamentals of music composition, including score notation software. Introduces basic manipulation of melodic and motivic composition devices, conscious use of texture, and basic knowledge of orchestration. Lecture 1 hour per week.
- MUS 148** (1–2 CR.) **Orchestra Ensemble \*\***  
 Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. May be repeated for credit. Laboratory 3–6 hours per week.
- MUS 149** (1–2 CR.) **Band Ensemble \*\***  
 Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. May be repeated for credit. Laboratory 3–6 hours per week.
- MUS 155** (1–2 CR.) **Applied Music: Woodwinds \***  
 Teaches fundamentals of the woodwind instruments. Studies the standard repertoire. Private lessons are available for either one or two hours of credit per semester. The length of the lessons will be half hour for one hour credit and one hour for two hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 1–2 half-hour lessons per week, 4–8 hours practice (laboratory) required.
- MUS 157** (3 CR.) **Sound Studio Design**  
 Prerequisite: division approval. Introduces the theory and practice of sound studio design. Provides a basic understanding of acoustics and the acoustical properties of construction materials. Allows the student practical opportunities in designing sound studios. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
- MUS 158** (3 CR.) **Recording Studio Electronics: Theory and Maintenance**  
 Introduces the practices used in maintaining professional recording equipment and basic electronic theory used within the recording industry. Provides the skills and knowledge necessary to perform routine maintenance and to repair recording and related equipment. Designed to prepare the student for a position as an entry-level technician or apprentice recording engineer. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
- MUS 159** (3 CR.) **Improvisational Techniques**  
 Prerequisite: selected applied music or freshman-level proficiency. Introduces the principles of improvisation using harmonic structures and progressions from the period of common practice. Includes listening to and performing music of the standard jazz and popular repertoire. Develops performance skills utilizing specific improvisational devices employed in different historical periods. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
- MUS 161** (2 CR.) **Class Strings**  
 Offers the beginning string student activities in learning musical notation, in accomplishing sight reading skills, and in mastering techniques of specific string instruments. Presents appropriate literature. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**MUS 163–164 (3 CR.) (3 CR.)****Guitar Theory and Practice I–II**

Studies the fundamentals of sound production, music theory, and harmony as they apply to guitar. Builds proficiency in both the techniques of playing the guitar and in the application of music fundamentals to these techniques. Presents different types of guitars and related instruments. Emphasizes music as entertainment and as a communication skill. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**MUS 165 (1–2 CR.)****Applied Music: Strings \***

Teaches fundamentals of string instruments, harp, or guitar. Studies the standard repertoire. Private lessons are available for either one or two hours of credit per semester. The length of the lessons will be half hour for one hour credit and one hour for two hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 1–2 half-hour lessons per week, 4–8 hours practice (laboratory) required.

**MUS 166 (2 CR.)****String Ensemble**

Prerequisite: An audition may be required. Performs standard string ensemble repertoire. Studies ensemble techniques and interpretation. May be repeated for credit. Laboratory 6 hours per week.

**MUS 175 (1–2 CR.)****Applied Music: Brass \***

Teaches fundamentals of brass instruments. Studies the standard repertoire. Private lessons are available for either one or two hours of credit per semester. The length of the lessons will be half hour for one hour credit and one hour for two hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 1–2 half-hour lessons per week, 4–8 hours practice (laboratory) required.

**MUS 179 (1 CR.)****Music Copyright Law**

Prerequisite: division approval. Introduces the legal problems and normal conventions practiced within the commercial music industry. Provides a basic understanding of national and international music copyright laws. Lecture 1 hour per week.

**MUS 185 (1–2 CR.)****Applied Music: Percussion \***

Teaches fundamentals of percussion instruments. Studies the standard repertoire. Private lessons are available for either one or two hours of credit per semester. The length of the lessons will be half hour for one hour credit and one hour for two hours credit per semester. All courses in applied music may be

repeated for a total of 8 hours for the major and 4 hours for the minor. 1–2 half-hour lessons per week, 4–8 hours practice (laboratory) required.

**MUS 211–212 (4 CR.) (4 CR.)****Advanced Music Theory I–II**

Prerequisites: MUS 111–112 or equivalent. Increases facility in the analysis and usage of diatonic and chromatic harmonies. Continues harmonic analysis of Bach style. Includes exercises in sight-singing, ear-training, and keyboard harmony. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**MUS 213–214 (3 CR.) (3 CR.)****Composition I–II**

Prerequisite: division approval. Requires the writing of short compositions in several styles, ranging from the eighteenth to the twentieth century, for various instrumental or vocal combinations. Individualized instruction meets the special need of each student. Score analysis forms an important part of this course. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**MUS 221 (3 CR.)****History of Music I**

Presents the chronology of musical styles from antiquity to the present time. Relates the historical development of music to parallel movements in art, drama, and literature. Develops techniques for listening analytically and critically to music. Lecture 3 hours per week.

**MUS 225 (3 CR.)****The History of Jazz**

Studies the underlying elements of jazz, concentrating on its cultural and historical development from earliest stages to the present. No previous knowledge of music is required. Lecture 3 hours per week.

**MUS 227 (3 CR.)****Editing and Mixdown Techniques**

Prerequisite: completion of 100-level recording technology certificate courses. Introduces the theories and practice of digital editing and mixdown techniques. Provides the skills necessary to edit, mixdown, externally reprocess, and otherwise manipulate multitrack original recordings into finished master recordings. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**MUS 231–232 (2 CR.) (2 CR.)****Advanced Class Voice I–II**

Continues MUS 131–132. Continues the expansion of appropriate vocal repertoire. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**MUS 235 (3 CR.)****Advanced Recording Techniques**

Prerequisite: MUS 140 or division approval.

Introduces advanced digital recording techniques that lead to mixdowns and digital masters for commercial CD duplication, other digital media and online distribution. Provides knowledge and skills in refined areas of digital multitrack recording and mixdown techniques. Includes a study of the process that converts finished digital masters to compact discs and digital files suitable for retail release. Studies troubleshooting skills pertaining to digital audio workstations. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**MUS 236 (1–2 CR.)****Advanced Applied Music: Voice \***

Continues MUS 126. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.

**MUS 237 (1–2 CR.)****Chorus Ensemble \*\***

Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. May be repeated for credit. Continues MUS 137. Laboratory 3–6 hours per week.

**MUS 238 (2 CR.)****Small Vocal Ensemble \*\***

Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. May be repeated for credit. Continues MUS 138. Laboratory 6 hours per week.

**MUS 239 (1 CR.)****Advanced Jazz Ensemble**

Consists of performance from standard jazz and American songbook repertoires, including study of ensemble techniques, interpretation, and improvisation. Continues jazz ensemble with additional leadership and responsibilities. Completion of jazz ensemble required. May be repeated for credit. Laboratory/rehearsal 3 hours per week.

**MUS 240 (1 CR.)****Advanced Jazz Chamber Ensemble**

Consists of performance of advanced repertoire in a jazz small group. Studies ensemble techniques, improvisation, and arranging. Continues Jazz Ensemble 100-level with additional leadership

responsibilities. Completion of Jazz Chamber Ensemble. May be repeated for credit. Laboratory/rehearsal 3 hours per week.

**MUS 241–242 (2 CR.) (2 CR.)****Advanced Class Piano I–II**

Teaches advanced applications of keyboard fundamentals and technical skills. Includes exercises in intervals, triads, all major and minor scales, and simple and compound meters. Uses advanced repertoire. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**MUS 245 (1–2 CR.)****Advanced Applied Music: Keyboard \***

Continues Applied Music: Keyboard MUS 145. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.

**MUS 248 (1–2 CR.)****Orchestra \*\***

Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. May be repeated for credit. Continues MUS 148. Laboratory 3–6 hours per week.

**MUS 249 (1–2 CR.)****Band Ensemble \*\***

Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. May be repeated for credit. Continues MUS 149. Laboratory 3–6 hours per week.

**MUS 255 (1–2 CR.)****Advanced Applied Music: Woodwinds \***

Continues Applied Music: Woodwinds MUS 155. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.

**MUS 259 (3 CR.)****Advanced Improvisational Techniques**

Prerequisite: MUS 159. Extends the improvisational performance skills of the student in the standard jazz repertoire through the use of techniques based on harmonic progressions, rhythmic patterns, and scalar and arpeggio patterns. Includes the practical application of modal theory to standard jazz and popular repertoire. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**MUS 265 (1–2 CR.)****Advanced Applied Music: Strings \***

Continues Applied Music: Strings MUS 165. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.

**MUS 266 (2 CR.)****Advanced String Ensemble**

Prerequisite: MUS 166 or permission of instructor. Performs advanced string ensemble repertoire. Studies ensemble techniques and interpretation. May be repeated for credit. Laboratory 6 hours per week.

**MUS 275 (1–2 CR.)****Advanced Applied Music: Brass \***

Continues Applied Music: Brass MUS 175. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.

**MUS 278 (2 CR.)****Multichannel Recording Workshop**

Prerequisite: division approval. Provides the opportunity to improve and refine multichannel recording techniques in a seminar and project format. Emphasizes hands-on laboratory experiences in multichannel recording, overdubbing, and mixdown techniques. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**MUS 285 (1–2 CR.)****Advanced Applied Music: Percussion \***

Continues Applied Music: Percussion, MUS 185. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.

**MUS 288 (2 CR.)****Recording Problems Seminar**

Prerequisite: division approval. Provides a seminar setting in which students may discuss recording problems with commercial music industry professionals. Introduces the student to professional organizations, libraries, and journals common to the recording industry. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**\*Applied Music:** Private lessons are available for either 1 or 2 hours of credit per semester. Students may take a one-half hour lesson for 1 credit or a 1-hour lesson for 2 credits per week per semester. All courses in applied music may be repeated one time. Music majors may repeat these courses up to 8 hours with special permission.

**\*\*Ensemble:** Courses in ensemble consist of performance from the standard repertoires, including study of ensemble techniques and interpretation. Laboratory/rehearsal is 3 hours per week for 1 credit and 6 hours per week for 2 credits.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Natural Science

**NAS 101–102 (4 CR.) (4 CR.)****Natural Sciences I–II**

Presents a multidisciplinary perspective integrating the main fields of science. Emphasizes the interaction of the scientific disciplines. (Primarily for nonscience majors.) Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**NAS 125 (4 CR.)****Meteorology**

Prerequisite: placement into ENG 111 or division approval. Presents a nontechnical survey of fundamental meteorology. Focuses on the effects of weather and climate on humans and their activities.

Serves for endorsement or recertification of earth science teachers. Lecture 3 hours. Recitation and laboratory 2 hours. Total 5 hours per week.

**NAS 130 (see also PHY 150) (4 CR.)****Elements of Astronomy**

Prerequisite: placement into ENG 111 or division approval. Covers history of astronomy and its recent developments. Stresses the use of astronomical instruments and measuring techniques and includes the study and observation of the solar system, stars, and galaxies. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**NAS 145 (3 CR.)****Introduction to Natural History**

Introduces developmental concepts and principles of natural history. Lecture 3 hours per week.

**NAS 150 (4 CR.)****Human Biology**

Prerequisite: placement into ENG 111 or division approval. Surveys the structure and function of the human body. Applies principally to students who are not majoring in science fields. Lecture 4 hours per week.

**NAS 161–162 (4 CR.) (4 CR.)****Health Science I–II**

Prerequisite: placement into ENG 111 and either BIO 101, NAS 150, or high school biology within the last 10 years or division approval. Prerequisite for NAS 162 is NAS 161 or division approval. Presents an integrated approach to human anatomy and physiology, microbiology, and pathology. Includes chemistry and physics as related to health sciences. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.**

## Nursing

**NSG 100 (4 CR.)****Introduction to Nursing Concepts**

Prerequisites: BIO 141 and BIO 142 or BIO 231 and 232, or NAS 161 and 162. ENG 111, PSY 230, SDV 101 or 100. Corequisites: BIO 150 or BIO205, NSG 106 and NSG 130, NSG 200. Introduces concepts of nursing practice and conceptual learning. Focuses on basic nursing concepts with an emphasis on safe nursing practice and the development of the nursing process. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**NSG 106 (2 CR.)****Competencies for Nursing Practice**

Prerequisites: MTE 1-5 and BIO 141 and BIO 142 or BIO 231 and 232, or NAS 161 and 162. ENG 111, PSY 230, SDV 101 or 100. Corequisites: BIO 150 or BIO205, NSG 100 and NSG 130, NSG 200. Focuses on the application of concepts through clinical skill development. Emphasizes the use of clinical judgment in skill acquisition. Includes principles of

safety, evidence-based practice, informatics and math computational skills. Prepares students to demonstrate competency in specific skills and drug dosage calculation including the integration of skills in the care of clients in simulated settings. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**NSG 130 (1 CR.)****Professional Nursing Concepts**

Prerequisites: BIO 141 and BIO 142 or BIO 231 and 232, or NAS 161 and 162. ENG 111, PSY 230, SDV 101 or 100. Corequisites: BIO 150 or BIO205, NSG 100 and NSG 106, NSG 200. Introduces the role of the professional nurse and fundamental concepts in professional development. Focuses on professional identity, legal/ethical issues and contemporary trends in professional nursing. Lecture 1 hour. Total 1 hour per week.

**NSG 152 (3 CR.)****Health Care Participant**

Prerequisites: BIO 142 (or BIO 232 or NAS 162), NSG 100, NSG 106, NSG 130 and NSG 200. Corequisites: BIO 150 or BIO 205; NSG 170. Focuses on the health and wellness of diverse individuals, families, and the community throughout the lifespan. Covers concepts that focus on client attributes and preferences regarding healthcare. Emphasizes population-focused care. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or cooperating agencies, and/or simulated environments. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**NSG 170 (6 CR.)****Health/Illness Concepts**

Focuses on the nursing care of individuals and/or families throughout the lifespan with an emphasis on health and illness concepts. Includes concepts of nursing care for the antepartum client and clients with common and predictable illnesses. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Lecture 4 hours. Laboratory 6 hours. Total 10 hours per week.



**NSG 200 (3 CR.)****Health Promotion and Assessment**

Prerequisites: BIO 141 and BIO 142 or BIO 231 and 232, or NAS 161 and 162. ENG 111, PSY 230, SDV 101 or 100. Corequisites: BIO 150 or BIO205, NSG 100 and NSG 106, NSG 130. Introduces assessment and health promotion for the individual and family. Includes assessment of infants, children, adults, geriatric clients and pregnant females. Emphasizes health history and the acquisition of physical assessment skills with underlying concepts of development, communication, and health promotion. Prepares students to demonstrate competency in the assessment of clients across the lifespan. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**NSG 210 (5 CR.)****Health Care Concepts I**

Prerequisites: BIO 141 and BIO 142 or BIO 231 and 232, or NAS 161 and 162. ENG 111, PSY 230, SDV 101 or 100. BIO 150 or BIO205, CST 110 or 115 or 126 or 229, NSG 100, NSG 106, NSG 130, NSG 152, NSG 170 and NSG 200. Corequisites: required Elective ENG 112 or HIS 101 or MTH 154 or MTH 245, NSG 211. Focuses on care of clients across the lifespan in multiple settings including concepts related to physiological health alterations and reproduction. Emphasizes the nursing process in the development of clinical judgment for clients with multiple needs. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Part I of II. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

**NSG 211 (5 CR.)****Health Care Concepts II**

Prerequisites: BIO 141 and BIO 142 or BIO 231 and 232, or NAS 161 and 162. ENG 111, PSY 230, SDV 101 or 100, BIO 150 or BIO205, CST 110 or 115 or 126 or 229, NSG 100, NSG 106, NSG 130, NSG 152, NSG 170 and NSG 200. Corequisites: required Elective ENG 112 or HIS 101 or MTH 154 or MTH 245, NSG 210. Focuses on care of clients across the lifespan in multiple settings including concepts related to psychological and physiological health alterations. Emphasizes the nursing process in the development of clinical judgment for clients with multiple needs. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Part II of II. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

**NSG 230 (2 CR.)****Advanced Professional Nursing Concepts**

Prerequisites: BIO 141 and BIO 142 or BIO 231 and 232, or NAS 161 and 162. ENG 111, PSY 230, SDV 101 or 100, BIO 150 or BIO205, CST 110 or 115 or 126 or 229, required Elective ENG 112 or HIS 101 or MTH 154 or MTH 245, NSG 100, NSG 106, NSG 130, NSG 152, NSG 170 and NSG 200, NSG 210, NSG 211. Corequisites: HUM Elective (see college catalog), NSG 252, NSG 270. Develops the role of the professional nurse in the healthcare environment in preparation for practice as a registered nurse. Introduces leadership and management concepts and focuses on the integration of professional behaviors in a variety of healthcare settings. Lecture 2 hours. Total 2 hours per week.

**NSG 252 (4 CR.)****Complex Health Care Concepts**

Prerequisites: BIO 141 and BIO 142 or BIO 231 and 232, or NAS 161 and 162. ENG 111, PSY 230, SDV 101 or 100, BIO 150 or BIO205, CST 110 or 115 or 126 or 229, required Elective ENG 112 or HIS 101 or MTH 154 or MTH 245, NSG 100, NSG 106, NSG 130, NSG 152, NSG 170 and NSG 200, NSG 210, NSG 211. Corequisites: HUM Elective (see college catalog), NSG 230, NSG 270. Focuses on nursing care of diverse individuals and families integrating complex health concepts. Emphasizes clinical judgment, patient-centered care and collaboration. Lecture 4 hours. Total 4 hours per week.

**NSG 270 (4 CR.)****Nursing Capstone**

Prerequisites: BIO 141 and BIO 142 or BIO 231 and 232, or NAS 161 and 162. ENG 111, PSY 230, SDV 101 or 100, BIO 150 or BIO205, CST 110 or 115 or 126 or 229, required Elective ENG 112 or HIS 101 or MTH 154 or MTH 245, NSG 100, NSG 106, NSG 130, NSG 152, NSG 170 and NSG 200, NSG 210, NSG 211. Corequisites: HUM Elective (see college catalog), NSG 230, NSG 252. Provides students with the opportunity to comprehensively apply and integrate learned concepts from previous nursing courses into a capstone experience. Emphasizes the mastery of patient-centered care, safety, nursing judgment, professional behaviors, informatics, quality improvement, and collaboration in the achievement of optimal outcomes of care. Provides supervised learning experiences in faculty and/or preceptor-guided college nursing laboratories, clinical/community settings, and/or simulated environments. Laboratory 12 hours. Total 12 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Occupational Therapy

Enrollment in OCT courses is restricted to students program-placed in the Occupational Therapy Assistant Program.

### **OCT 100 (3 CR.)**

#### **Introduction to Occupational Therapy**

Prerequisite: admission to the Occupational Therapy Assistant Program. Introduces the concepts of occupational therapy as a means of directing a person's participation in tasks selected to develop, maintain, or restore skills in daily living. Examines the role of the assistant for each function of occupational therapy, and for various practice settings in relationship to various members of the healthcare team. Lecture 3 hours per week.

### **OCT 201 (3 CR.)**

#### **Occupational Therapy with Psychosocial Dysfunction**

Prerequisite: instructor permission. Focuses on the theory and application of occupational therapy in the evaluation and treatment of psychosocial dysfunction. Includes a survey of conditions which cause emotional, mental, and social disability, as well as the role of the occupational therapy assistant in the assessment, planning, and implementation of treatment programs. Lecture 3 hours per week.

### **OCT 202 (4 CR.)**

#### **Occupational Therapy with Physical Disabilities**

Prerequisite: admission to the Occupational Therapy Assistant Program. Focuses on the theory and application of occupational therapy in the evaluation and treatment of physical dysfunction. Includes a survey of conditions which cause physical disability as well as the role of the occupational therapy assistant in assessment, planning, and implementation of treatment programs. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **OCT 203 (4 CR.)**

#### **Occupational Therapy with Developmental Disabilities**

Focuses on the theory and application of occupational therapy in the evaluation and treatment of developmental dysfunction. Includes a survey of conditions which cause developmental disability across the life span, with particular emphasis on children and the elderly. Investigates the role of the occupational therapist in assessment, planning, and implementation of treatment programs. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **OCT 205 (2 CR.)**

#### **Therapeutic Media**

Develops proficiency in various crafts used as treatment modalities in occupational therapy. Emphasizes how to analyze, adapt, and teach selected activities as well as how to equip and maintain a safe working environment. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

### **OCT 206 (3 CR.)**

#### **Dyadic and Group Dynamics**

Provides theory and activity to develop positive interpersonal relationships and effective communication ability. Includes non-verbal communication, listening, observation, interviewing and documentation. Covers group process and its application to occupational therapy, including types of therapeutic groups, group membership roles, leadership skills and forces which affect group function and decision making. Lecture 3 hours per week.

### **OCT 207 (3 CR.)**

#### **Therapeutic Skills**

Prerequisite: instructor permission. Presents techniques used in the treatment of a variety of conditions frequently seen across the life span. Emphasizes the activities of self-care, work, and leisure as they relate to the development/resumption of normal social role functioning. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **OCT 208 (3 CR.)**

#### **Occupational Therapy Service Management**

Prerequisite: instructor permission. Presents principles and techniques of management appropriate to the occupational therapy assistant. Includes roles and functions of the supervisor and the supervisee, scheduling, billing, and quality improvement. Issues relevant to professional practice and patient care will be discussed with similarities and differences between various facilities highlighted. Lecture 3 hours per week.

### **OCT 210 (2 CR.)**

#### **Assistive Technology in Occupational Therapy**

Prerequisites: OCT 202 and OCT 203 or instructor permission. Explores the assistive technologies available for persons with physical, sensory, and cognitive disabilities. Provides instruction in the process of assessment, selection adaptation and training of assistive technology to persons with a disability. Presents information on funding and maintenance of devices. Exposes students to technology in clinical practice and equipment companies. Lecture 2 hours per week.

**OCT 225 (4 CR.)  
Neurological Concepts for Occupational  
Therapy Assistants**

Focuses on the workings of the human nervous system from the cellular level to the systems level with an emphasis on normal neurological function, the impact of neurological dysfunction, and how to use neurological rehabilitation techniques to facilitate the rehabilitation process across the life span. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**Paralegal Studies**

See Legal (LGL).

**Philosophy**

**PHI 101 (3 CR.)  
Introduction to Philosophy I**

Introduces a broad spectrum of philosophical problems and perspectives with an emphasis on the systematic questioning of basic assumptions about meaning, knowledge, reality, and values. Lecture 3 hours per week.

**PHI 111 (3 CR.)  
Logic I**

Introduces inductive and deductive reasoning, with an emphasis on common errors and fallacies. Lecture 3 hours per week.

**PHI 112 (3 CR.)  
Logic II**

Evaluates deductive arguments utilizing methods of symbolic logic. Lecture 3 hours per week.

**PHI 115 (3 CR.)  
Practical Reasoning**

Studies informal logic and language techniques as they relate to reasoning and argument. Provides practice in analyzing arguments and constructing sound arguments. Lecture 3 hours per week.

**PHI 220 (3 CR.)  
Ethics**

Provides a systematic study of representative ethical systems. Lecture 3 hours per week.

**PHI 225 (3 CR.)  
Selected Problems in Applied Ethics**

Analyzes and discusses significant contemporary ethical issues and problems existing throughout the various professions such as business, medicine, law, education, journalism, and public affairs. May be repeated for credit. Lecture 3 hours per week.

**PHI 227 (3 CR.)  
Biomedical Ethics**

Examines the ethical implications of specific biomedical issues in the context of major ethical systems. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

**Photography**

**PHT 101-102 (3 CR.) (3 CR.)  
Photography I-II**

Teaches principles of photography and fundamental camera techniques. Requires outside shooting and lab work. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

**PHT 103 (3 CR.)  
Black and White Darkroom Photography I**

Highlights principles of photography including camera operation and darkroom procedures. Focuses on black and white photography. Requires outside shooting and lab work. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**PHT 104 (3 CR.)  
Black and White Darkroom Photography II**

Highlights advanced principles of photography including camera operation and darkroom techniques. Requires outside shooting and lab work. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**PHT 110 (3 CR.)  
History of Photography**

Surveys important photographers, technical developments, and historical influences on nineteenth and twentieth century photography. Lecture 3 hours per week.

**PHT 130 (3 CR.)  
Video I**

Introduces the basics of recording and editing video and sound for a variety of intents. Explores time-based media as an art form and means of communication. Part I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**PHT 131 (3 CR.)  
Video II**

Prerequisite: PHT 130 or permission of the instructor. Introduces the basics of recording and editing video and sound for a variety of intents. Explores time-based media as an art form and means of communication. Part II of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

- PHT 201 (3 CR.) Advanced Photography I**  
Prerequisite: PHT 102 or equivalent. Provides weekly critiques of students' work. Centers on specific problems found in critiques. Includes working procedures and critical skills in looking at photographs. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 202 (3 CR.) Advanced Photography II**  
Prerequisite: PHT 102 or equivalent. Provides weekly critiques of students' work. Centers on specific problems found in critiques. Includes working procedures and critical skills in looking at photographs. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 211 (3 CR.) Color Photography I**  
Prerequisites: PHT 100, PHT 135, or permission of the instructor. Introduces theory, materials, and processes of modern color images. Includes additive and subtractive theory, color filtration, and negative and positive printing techniques. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 221 (3 CR.) Studio Lighting I**  
Prerequisite: PHT 102 or equivalent. Examines advanced lighting and camera techniques under controlled studio conditions. Includes view camera use, electronic flash, advanced lighting techniques, color temperature and filtration, and lighting ratios. Requires outside shooting. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 222 (3 CR.) Studio Lighting II**  
Prerequisite: PHT 102 or equivalent. Examines advanced lighting and camera techniques under controlled studio conditions. Includes view camera use, electronic flash, advanced lighting techniques, color temperature and filtration, and lighting ratios. Requires outside shooting. Part II of II. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 227 (3 CR.) Photographic Careers**  
Teaches the techniques of small photographic business operations. Includes portfolio preparation and presentation and basic marketing techniques. Covers theory of marketing, costing procedures and problems, legal accounting problems, copyright, and fundamentals of small photographic business operation. Lecture 3 hours per week.
- PHT 231 (3 CR.) Photojournalism I**  
Prerequisites: PHT 102 or PHT 135, or equivalent, and basic computer skills. Introduces equipment, techniques, skills, and concepts of photojournalism. Teaches photography for features, spot news, and photo essays. Emphasizes editing, captioning, and layout. May require individual projects. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 235 (3 CR.) Documentary Photography**  
Prerequisites: PHT 102 and basic computer skills or permission of instructor. Students learn how to create an in-depth documentary photography photo-essay. The final project will be edited for presentation. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 247 (3 CR.) Alternative Photographic Processes**  
Prerequisite: PHT 102 or equivalent. Explores manipulated imagery including traditional and nontraditional processes such as nonsilver and electronic imaging. Uses enlarged film negatives in order to investigate a variety of methods. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.
- PHT 256 (3 CR.) Communicating through the Photographic Sequence**  
Prerequisites: PHT 101, PHT 102, PHT 211, PHT 270, or permission of instructor. Using experiences of sequencing, involves the student in creating a picture book composed of images that have been placed in a sequence that has special visual meaning. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.
- PHT 270–271 (3 CR.) (3 CR.) Digital Imaging I–II**  
Introduces students to the tools and techniques used by professionals in the electronic imaging field. Focuses on current trends within the photographic, prepress, and Internet industries. Includes image capture, manipulation, and output. Exposes students to the hardware and software used by today's creative professionals in a combination of lectures, demonstrations, and class projects. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**PHT 274 (3 CR.)  
Digital Film Editing and Post Production**

Introduces students to techniques and procedures involved in digital film editing and post production. Covers aspects of editing to include industry standard software packages. Emphasizes the mechanics and obstacles of working with the moving image in the twenty-first century including available tools and methods, importance of file types, and how to keep things organized. Lecture 2 hours. Lab 2 hours. Total 4 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.**

## Physical Education and Recreation

**PED 100 (1 CR.)  
Pilates**

Provides a method of mind-body exercise and physical movement designed to stretch, strengthen, balance the body, and improve posture and core stabilization while increasing body awareness. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 103 (1 CR.)  
Aerobic Fitness I**

Develops cardiovascular fitness through activities designed to elevate and sustain heart rates appropriate to age and physical condition. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 105 (1 CR.)  
Aerobic Dance I**

Focuses on physical fitness through dance exercises. Emphasizes the development of cardiovascular endurance, muscular endurance, and flexibility. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 107 (1 CR.)  
Exercise and Nutrition**

Provides the student with a full body workout through flexibility, strength, and cardiovascular endurance exercises. Includes fitness evaluation, nutrition analysis, and weight control. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 109 (1 CR.)  
Yoga**

Focuses on the forms of yoga training emphasizing flexibility. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 110 (1 CR.)  
Zumba**

Focuses on Latin rhythms, dance moves, and techniques in Zumba. Utilizes physical activity, cardiovascular endurance, balance, coordination and flexibility as related to dance. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 111 (1 CR.)  
Weight Training I**

Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 113 (1 CR.)  
Lifetime Activities**

Presents lifetime sports and activities. Teaches skills and methods of lifetime sports and activities appropriate to the local season and facilities available. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 116 (1–2 CR.)  
Lifetime Fitness and Wellness**

Provides a study of fitness and wellness and their relationship to a healthy lifestyle. Defines fitness and wellness, evaluates the student’s level of fitness and wellness, and motivates the student to incorporate physical fitness and wellness into daily living. A personal fitness/wellness plan is required for the 2-credit course. For PED 116—1 credit: Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week. For PED 116—2 credits: Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**PED 117 (1 CR.)  
Fitness Walking**

Teaches content and skills needed to design, implement, and evaluate an individualized program of walking, based upon fitness level. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 120 (2 CR.)  
Yoga II**

Prerequisite: PED 109. Focuses on the forms of yoga training emphasizing flexibility, breathing, and meditation. Laboratory 4 hours per week.

**PED 121 (1 CR.)  
Racquetball I**

Teaches racquetball skills and strategies for team and individual play. Includes terminology, scoring, etiquette, equipment selection, and safety. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.



<p><b>PED 123</b> <b>Tennis I</b> Teaches tennis skills with emphasis on stroke development and strategies for individual and team play. Includes rules, scoring, terminology, and etiquette. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>	<p><b>PED 137-138</b> <b>Martial Arts I-II</b> Emphasizes forms, styles, and techniques of body control, physical and mental discipline, and physical fitness. Presents a brief history of development of martial arts theory and practice. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.) (1 CR.)</b></p>
<p><b>PED 125</b> <b>Badminton</b> Introduces skills, techniques, strategies, rules, and scoring. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>	<p><b>PED 139</b> <b>Ice Skating</b> Introduces the skills of figure skating with emphasis on form. Includes equipment selection and safety. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>
<p><b>PED 126</b> <b>Archery</b> Teaches skills and techniques of target archery. Focuses on use and maintenance of equipment, terminology, and safety. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>	<p><b>PED 141-142</b> <b>Swimming I-II</b> Prerequisite for PED 142: PED 141 or instructor's permission. Introduces skills and methods of swimming strokes. Focuses on safety and physical conditioning. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.) (1 CR.)</b></p>
<p><b>PED 127</b> <b>Cycling</b> Introduces cycling techniques, equipment selection, care and maintenance, safety, and physical conditioning. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>	<p><b>PED 144</b> <b>Skin and Scuba Diving</b> Prerequisite: strong swimming skills. Emphasizes skills and methods of skin and scuba diving. Includes training with underwater breathing apparatus and focuses on safety procedures and selection, and use of equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</p>	<p><b>(3 CR.)</b></p>
<p><b>PED 129</b> <b>Self-Defense</b> Examines history, techniques, and movements associated with self-defense. Introduces the skills and methods of self-defense emphasizing mental and physical discipline. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>	<p><b>PED 150</b> <b>Soccer</b> Emphasizes soccer skills and techniques, strategies, rules, equipment, and physical conditioning. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>
<p><b>PED 131</b> <b>Fencing I</b> Presents the skills and techniques of foil fencing emphasizing footwork, terminology, rules, and strategies of offensive and defensive movements. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>	<p><b>PED 152</b> <b>Basketball</b> Introduces basketball skills, techniques, rules, and strategies. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>
<p><b>PED 133</b> <b>Golf I</b> Teaches basic skills of golf, rules, etiquette, scoring, terminology, equipment selection and use, and strategy. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>	<p><b>PED 154</b> <b>Volleyball</b> Introduces skills, techniques, strategies, rules, and scoring. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>
<p><b>PED 135</b> <b>Bowling I</b> Teaches basic bowling skills and techniques, scoring, rules, etiquette, and terminology. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>	<p><b>PED 155</b> <b>Wallyball</b> Focuses on skills, techniques, strategies, rules, and scoring. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.</p>	<p><b>(1 CR.)</b></p>

- PED 160 (1 CR.) Modern Dance**  
Teaches the basic techniques of creative dance. Skills include self-expression, contemporary routines, dance forms, and basic choreography. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.
- PED 161 (1 CR.) Dance Production I**  
Focuses on creating a dance performance. Teaches the basic skills in creating and producing a dance. Includes lighting, costumes, music, and choreography. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.
- PED 163 (1 CR.) Jazz I**  
Introduces dance through contemporary jazz movements. Includes floor stretches, isolations, dance patterns, and locomotor movements. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.
- PED 164 (1 CR.) Jazz II**  
Continues dance through contemporary jazz movements. Includes floor stretches, isolations, dance patterns and locomotor movements. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.
- PED 166 (1 CR.) Ballet**  
Teaches ballet as a discipline with correct alignment and ballet form. Expresses movement through traditional dance form with choreographic emphasis. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.
- PED 168 (3 CR.) Basic Personal Trainer Preparation**  
Introduces the skills and knowledge required to become a personal trainer. Includes the principles of individual weight management, personal wellness, and the skills necessary for the creation of a fitness program for potential clients. 3 credit hours. 2 lecture hours. 2 lab hours. 4 hours per week.
- PED 171 (1 CR.) Ballroom Dance I**  
Presents the basic step patterns, rhythmic patterns, and positions in ballroom dance. Includes techniques based upon traditional steps with basic choreographic patterns. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.
- PED 172 (1 CR.) Ballroom Dance II**  
Presents the basic step patterns, rhythmic patterns, and positions in ballroom dance. Includes techniques based upon traditional steps with basic choreographic patterns. Part II of II. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.
- PED 173 (1 CR.) Rock Climbing and Rappelling**  
Presents techniques and skills of climbing and rappelling with emphasis on safety, equipment, skills in knot tying, terminology and physical conditioning. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.
- PED 181–182 (1 CR.) (1 CR.) Downhill Skiing I–II**  
Prerequisite for PED 182: PED 181 or instructor’s permission. Teaches basic skills of downhill skiing, selection and use of equipment, terminology, and safety rules. Includes field experience. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.
- PED 183 (2 CR.) Outdoor Adventures I**  
Introduces outdoor adventure activities with emphasis on basic skills, preparation, personal and group safety, equipment selection and use, ecology, and field experience. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.
- PED 220 (2–3 CR.) Adult Health and Development**  
Provides direct application of the theories of aging and physical activity. Teaches techniques for developing appropriate individualized fitness and activity programs for older adults. Includes assessment and evaluation of physical fitness principles, role of exercise in disease prevention, leadership skills, and communication strategies. For PED 220—2 credits: Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week. For PED 220—3 credits: Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
- PED 245 (2 CR.) Lifeguard Training**  
Prerequisites: ability to (1) swim continuously for 500 yards for a minimum of 100 yards each of crawl/freestyle, breaststroke, and sidestroke; (2) submerge to a minimum of 7 feet, retrieve a 10-pound object and return it to the surface; (3) tread water for 2 minutes using legs only; and (4) be 15 years of age by the first class. Introduces basic swimming and nonswimming rescues, swimming approaches and carries, water survival, and first aid and safety practices. Focuses on preparation for the American Red Cross Lifeguard Certificate. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.**

## Physical Therapist Assistant

Enrollment in PTH courses is restricted to students program-placed in the Physical Therapist Assistant Program.

### **PTH 105 (3 CR.) Introduction to Physical Therapy**

Introduces the physical therapist assistant student to various aspects of physical therapy, and exposes the student to the physical therapy clinical setting. Lecture 1 hour. Lab/clinical 4 hours. Total 5 hours per week.

### **PTH 115 (5 CR.) Kinesiology for the Physical Therapist Assistant**

Focuses on the relationship of specific joint structure and function, the role of individual muscles and groups of muscles and neurological principles in both normal and pathological movement. The course includes a review of basic physics and biomechanical principles applied to human movement. Includes specific posture and gait analysis. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

### **PTH 121–122 (5 CR.) (5 CR.) Therapeutic Procedures I–II**

Emphasizes therapeutic procedures utilized by physical therapist assistants. Allows students to practice elements of patient care and therapeutic skills. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

### **PTH 131 (3 CR.) Clinical Education I**

Provides supervised instruction in administering therapeutic skills in a variety of clinical settings. Emphasizes the development of oral and written communication skills and the understanding of commonly seen disabilities. Lecture 1 hour. Clinical 8 hours. Total 9 hours per week.

### **PTH 151 (5 CR.) Musculoskeletal Structure and Function**

Focuses on the musculoskeletal system and the nervous system. Emphasizes bone formation and landmarks; ligaments, muscle origin, action, and innervation. Includes basic sensory and motor control. Prepares student for principles of kinesiology and biomechanics. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

### **PTH 210 (2 CR.) Psychological Aspects of Therapy**

Focuses on the psychological reactions and behavioral changes in patients and their families. Emphasizes techniques of effective interaction between the allied health worker and the patient. Lecture 2 hours per week.

### **PTH 225 (5 CR.) Rehabilitation Procedures**

Focuses on rehabilitation techniques utilized in the treatment of disabling conditions. Emphasizes advanced exercise procedures, prosthetic and orthotic training, and other specialized techniques. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

### **PTH 227 (3 CR.) Pathological Conditions**

Studies specific pathologic conditions commonly seen in physical therapy. Emphasizes musculoskeletal and neurological system conditions. Lecture 3 hours per week.

### **PTH 231–232 (5 CR.) (5 CR.) Clinical Education II–III**

Provides instruction during the administration of therapeutic skills in a clinical setting. Emphasizes the total therapy program including rehabilitation techniques and specialized exercise programs. Provides experience in a variety of clinical settings. For PTH 231—lecture 2 hours. Clinical 15 hours. Total 17 hours per week. For PTH 232—lecture 1 hour. Clinical 20 hours. Total 21 hours per week.

### **PTH 245 (3 CR.) Professional Issues**

Studies administrative procedures, changing practices in physical therapy, and trends in healthcare delivery. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.**

## Physics

### **PHY 101–102 (4 CR.) (4 CR.) Introduction to Physics I–II**

Recommended prerequisite: satisfactory placement score for ENG 111. Prerequisite for PHY 102: PHY 101 and satisfactory placement score for ENG 111. Surveys general principles of physics. Includes topics such as force and motion, energy, heat, sound, (PHY 101) light, electricity and magnetism, and modern physics (PHY 102). Involves using arithmetic and some simple algebra, mostly in laboratory. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **PHY 130 (3 CR.) Survey of Applied Physics**

Surveys topics such as heat, electricity, and light with emphasis on practical applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**PHY 150** (4 CR.)  
**Elements of Astronomy**

Prerequisite: placement into ENG 111 or division approval. Covers history of astronomy and its recent developments. Stresses the use of astronomical instruments and measuring techniques and includes the study and observation of the solar system, stars, and galaxies. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**PHY 201-202** (4 CR.) (4 CR.)  
**General College Physics I-II**

Prerequisite: MTH 161 or equivalent and satisfactory placement score for ENG 111. Prerequisite for PHY 202: PHY 201 and satisfactory placement score for ENG 111. Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity, optics, magnetism, and selected topics in modern physics. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**PHY 231-232** (5 CR.) (5 CR.)  
**General University Physics I-II**

Prerequisites for PHY 231: MTH 263 or division approval and satisfactory placement score for ENG 111. Prerequisite for PHY 232: PHY 231, MTH 264, and satisfactory placement score for ENG 111 or division approval. Teaches principles of classical physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, and optics, with extended coverage of selected topics. Includes recitation as part of the lecture. Lecture 4 hours (includes recitation). Laboratory 2 hours. Total 6 hours per week.

**PHY 243** (4 CR.)  
**Modern Physics**

Prerequisites: PHY 232 and satisfactory placement score for ENG 111. For majors requiring calculus-based physics. Teaches principles of modern physics. Includes in-depth coverage of relativity, quantum physics, and solid state and nuclear physics. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week. Additional 1 credit recitation hour recommended.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Political Science

**PLS 120** (3 CR.)  
**Introduction to Political Science**

Teaches basic concepts and methods of the discipline of political science through study of political dimensions of a selected topic. Lecture 3 hours per week.

**PLS 135** (3 CR.)  
**American National Politics**

Teaches political institutions and processes of the national government of the United States; focuses on the Congress, presidency, and the courts, and their interrelationships. Gives attention to public opinion, suffrage, elections, political parties, interest groups, civil rights, domestic policy, and foreign relations. Lecture 3 hours per week.

**PLS 136** (3 CR.)  
**State and Local Politics**

Teaches structure, powers, and functions of state and local government in the United States. Lecture 3 hours per week.

**PLS 140** (3 CR.)  
**Introduction to Comparative Politics**

Teaches basic concepts and methods of comparative politics. Includes analyses of government and politics in a variety of nations around the world. Lecture 3 hours per week.

**PLS 200** (3 CR.)  
**Political Ideologies**

Analyzes and critically evaluates many leading ideologies of the modern world, such as anarchism, nationalism, fascism, national socialism, classical liberalism, conservatism, Fabian socialism, Marxism-Leninism, and liberal democracy. Evaluates contemporary extremist ideologies of both left and right. Lecture 3 hours per week.

**PLS 211-212** (3 CR.) (3 CR.)  
**U.S. Government I-II**

Teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Lecture 3 hours per week.

**PLS 220** (3 CR.)  
**Political Parties and Elections in the United States**

Teaches basic concepts of American political parties and elections. Lecture 3 hours per week.

**PLS 225** (3 CR.)  
**The United States Presidency**

Describes the modern American presidency. Focuses on the presidency and many issues related to that office: the people, the powers, and the current environment in which the presidents serve. Lecture 3 hours per week.

**PLS 230 (3 CR.)****Congress of the United States Government**

Teaches the creation and development of the legislative branch of American government, and how that branch—Congress—interacts with the presidency, judiciary, and other aspects of American politics, such as campaigns, elections, political parties, media, bureaucracy, domestic policy, and foreign policy. Lecture 3 hours per week.

**PLS 241 (3 CR.)****International Relations I**

Teaches geographic, demographic, economic, ideological, and other factors conditioning the policies of countries, and discusses conflicts and their adjustment. Lecture 3 hours per week.

**PLS 242 (3 CR.)****International Relations II**

Teaches foreign policies of the major powers in the world community with an emphasis on the role of the United States in international politics. Lecture 3 hours per week.

**PLS 250 (3 CR.)****Introduction to Conflict Resolution**

Teaches basic concepts and methods of conflict resolution, which includes the factors that lead to conflict, and how conflicts can be prevented or brought to an end through peaceful means. Focuses on national and international conflict resolution. Lecture 3 hours per week.

**PLS 255 (3 CR.)****Introduction to Peace and Stability Operations**

Introduces the concept of coordinated public, private, international, and nonprofit sector responses to conflict, post-conflict, and natural disaster international humanitarian emergencies with the objective of returning states and regions to peace and stability. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Psychology

**PSY 100 (3 CR.)****Principles of Applied Psychology**

Introduces the general principles of psychology as they are applied to work, relationships, and growth. Includes perception, learning, development, motivation, emotion, therapy, communication, and attitudes. Lecture 3 hours per week.

**PSY 120 (3 CR.)****Human Relations**

Introduces the theory and practice of effective human relations. Increases understanding of self and others and interpersonal skills needed to be a competent and cooperative communicator. Lecture 3 hours per week.

**PSY 125 (3 CR.)****Interpersonal Relationships**

Studies individual behavior as it affects the individual's relationships. Considers such topics as attitudes, needs, values, leadership, communication, and group dynamics. Teaches constructive methods of interpersonal problem solving. Lecture 3 hours per week.

**PSY 200 (3 CR.)****Principles of Psychology**

Surveys the basic concepts of psychology. Covers the scientific study of behavior, behavioral research methods and analysis, and theoretical interpretations. Includes topics that cover physiological mechanisms, sensation/perception, motivation, learning, personality, psychopathology, therapy, and social psychology. Lecture 3 hours per week. (Students who take PSY 200 cannot receive credit for either PSY 201 or PSY 202.)

**PSY 201–202 (3 CR.) (3 CR.)****Introduction to Psychology I–II**

Prerequisite for PSY 202: PSY 201. Examines human and animal behavior, relating experimental studies to practical problems. Includes topics such as sensation/perception, learning, memory, motivation, emotion, stress, development, intelligence, personality, psychopathology, therapy, and social psychology. Lecture 3 hours per week. (Students who take either PSY 201 or PSY 202 cannot receive credit for PSY 200.)

**PSY 205 (3 CR.)****Personal Conflict and Crisis Management**

Studies the effective recognition and handling of personal and interpersonal conflicts. Discusses cooperative roles of public and private agencies, management of family disturbances, child abuse, rape, suicide, and related cases. Lecture 3 hours per week.

**PSY 211 (3 CR.)****Research Methodology for Behavioral Sciences**

Prerequisites: PSY 201–202 or PSY 200. Introduces the principles and processes of various research procedures for applying the scientific method to understanding behavior. Includes preparation for conducting, understanding, and interpreting



laboratory and field studies; documenting principles through research; and applying critical assessment to generic research. Lecture 3 hours per week.

**PSY 213 (3 CR.)  
Statistics for Behavioral Sciences**

Prerequisites: PSY 201–202 or PSY 200. Introduces the principles and processes of statistics within behavioral research. Emphasizes understanding and applying statistical tests to behavioral data. Stresses recognition and use of process, based on knowledge and understanding, over mathematical derivation. Focuses on selection of appropriate statistics, their application and correct decisions of interpretation within a behavioral research experience. Lecture 3 hours per week.

**PSY 215 (3 CR.)  
Abnormal Psychology**

Prerequisite: PSY 200, PSY 201, or 202 or permission of instructor. Explores historical views and current perspectives of abnormal behavior. Emphasizes major diagnostic categories and criteria, individual and social factors of maladaptive behavior, and types of therapy. Includes methods of clinical assessment and research strategies. Lecture 3 hours per week.

**PSY 216 (3 CR.)  
Social Psychology**

Prerequisite: PSY 200, PSY 201, or PSY 202, or permission of instructor. Examines individuals in social contexts, social roles, group processes, and intergroup relations. Includes topics such as small group behavior, social behavior, social cognition, conformity, attitudes, and motivation. Lecture 3 hours per week. This course is also approved for offering as SOC.

**PSY 219 (3 CR.)  
Cross-Cultural Psychology**

Prerequisite: PSY 200, PSY 201, or PSY 202. Investigates psychological principles from a cross-cultural perspective. Examines cultural basics for views of reality. Describes topics such as time, space, values, sex-roles, and human development in relation to culture. Lecture 3 hours per week.

**PSY 225 (3 CR.)  
Theories of Personality**

Prerequisite: PSY 200, PSY 201, or PSY 202, or permission of instructor. PSY 225 and HMS 265 cannot both be taken for credit toward graduation. Studies the major personality theories and their applications. Includes psychodynamic, behavioral, cognitive, and humanistic perspectives. Lecture 3 hours per week.

**PSY 230 (3 CR.)  
Developmental Psychology**

Studies the development of the individual from conception to death. Follows a life-span perspective on the development of the person's physical, cognitive, and psychosocial growth. Lecture 3 hours per week. (Students who take PSY 230 cannot receive credit for either PSY 231 or PSY 232.)

**PSY 231–232 (3 CR.) (3 CR.)  
Life Span Human Development I–II**

Investigates human behavior through the life cycle. Describes physical, cognitive, and psycho-social aspects of human development from conception to death. Lecture 3 hours per week. (Students who take either PSY 231 or PSY 232 cannot receive credit for PSY 230. Students who take PSY 231 cannot receive credit for PSY 235.)

**PSY 235 (3 CR.)  
Child Psychology**

Studies development of the child from conception to adolescence. Investigates physical, intellectual, social, and emotional factors involved in the child's development. Lecture 3 hours per week. (Students who take PSY 235 cannot receive credit for PSY 231.)

**PSY 236 (3 CR.)  
Adolescent Psychology**

Studies development of the adolescent. Investigates physical, intellectual, social, and emotional factors of the individual from late childhood to early adulthood. Lecture 3 hours per week.

**PSY 237 (3 CR.)  
Adult Psychology**

Studies development of the adult personality. Investigates physical, intellectual, social, and emotional aspects of aging from early adulthood to death. Lecture 3 hours per week.

**PSY 240 (3 CR.)  
Health Psychology**

Prerequisite: PSY 200, PSY 201, or division approval. Studies the psychology of healthy behavior. Applies psychological principles to preventative health care. Covers topics such as exercise, nutrition, stress, lifestyles, and habits. Lecture 3 hours per week.

**PSY 250 (3 CR.)  
Law Enforcement Psychology**

Prerequisite: PSY 100, PSY 125, or division approval. Studies the psychology of police work in interpersonal or intergroup situations. Includes topics such as prejudice, suggestion, emotion, frustration, and aggression. Lecture 3 hours per week.

**PSY 255 (3 CR.)****Psychological Aspects of Criminal Behavior**

Prerequisite: PSY 202 or approval of instructor. Studies psychology of criminal behavior. Includes topics such as violent and nonviolent crime, sexual offenses, insanity, addiction, white-collar crime, and other deviant behaviors. Provides a background for law enforcement occupations. Lecture 3 hours per week.

**PSY 260 (3 CR.)****Psychopharmacology and Substance Abuse**

Prerequisite: PSY 200, PSY 201, or division approval. Examines how psychoactive drugs interact with the body and the brain. Explores the use of prescription psychoactive drugs to treat mental disorders. Explores the use of psychoactive drugs in American culture. Differentiates use and abuse of psychoactive substances so that symptoms of abuse can be identified in a person. Investigates various treatments of substance abuse. Lecture 3 hours per week.

**PSY 265 (3 CR.)****Psychology of Men and Women**

Prerequisites: PSY 125, PSY 200, PSY 201, or PSY 202 or approval of instructor. Examines the major determinants of sex differences. Emphasizes psychosexual differentiation and gender identity from sex and gender, biological, interpersonal, and sociocultural perspectives. Includes topics such as sex roles, socialization, rape, abuse, and androgyny. Lecture 3 hours per week.

**PSY 270 (3 CR.)****Psychology of Human Sexuality**

Prerequisite: PSY 200, PSY 201, or PSY 202, or division approval. Focuses on scientific investigation of human sexuality and psychological and social implications of such research. Considers sociocultural influences, the physiology and psychology of sexual response patterns, sexual dysfunctions, and development of relationships. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Public Service

**PBS 100 (3 CR.)****Introduction to Public Administration**

Focuses on principles underlying public administration in federal, state, and local government. Examines the role of government, administrative and policy processes, organizational structure, basic problems of management, administrative responsibility, and the future of public administration. Lecture 3 hours per week.

**PBS 105 (3 CR.)****Personnel Management in the Public Sector**

Studies modern public service, including personnel in government, personnel management, benefits and wages, staffing, and growth and development. Also examines issues of public personnel management, motivation, productivity, labor management relations, equal opportunity through affirmative action, and professionalism. Lecture 3 hours per week.

**PBS 116 (3 CR.)****Public Budgeting and Finance**

Reviews history of different approaches to public budgeting and examines the budgeting process in government. Examines the development of public planning at all levels of government with an emphasis on budgetary process. Gives consideration to revenue sources, administration, and structure. Lecture 3 hours per week.

**PBS 140 (3 CR.)****Principles of Emergency Management**

Teaches a framework intended to guide emergency planners through the process of mitigation, preparedness, response, and recovery. Presents the concepts of emergency management, its integration of systems, identification of hazards and their analyses as well as the nature of local government emergency planning. Lecture 3 hours per week.

**PBS 240 (3 CR.)****Constitutional Law**

Surveys state and federal constitutional provisions pertinent to the relations between state and federal governments. Examines separation of powers, delegation of powers, interstate relations, commerce powers, civil rights, and liberties. Gives consideration to the establishment and interpretation of federal, state, and local regulations which implement public policy. Lecture 3 hours per week.

**PBS 255 (3 CR.)****Management of the Modern City**

Teaches basic concepts of city administration. Covers relationships among city, state, and federal jurisdictions as well as cooperative efforts among city departments. Uses case study methods to emphasize the environment and organization of the city, the city administrator, and intergovernmental relationships affecting the city. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Radiation Oncology

### **ROC 131 (4 CR.)**

#### **Clinical Clerkship I**

Introduces student to clinical setting and the basics of radiation oncology. Covers basic technical and patient care skills through supervised direct patient contact and phantom work. Lecture 1 hour. Laboratory 15 hours. Total 16 hours per week.

### **ROC 132 (5 CR.)**

#### **Clinical Clerkship II**

Prerequisite: ROC 131. Continues supervised direct patient contact and phantom work with focus on technical skills related to equipment manipulation. With minimal assistance the student should be able to perform basic treatment and simulation procedures as well as patient care skills. Laboratory 25 hours per week.

### **ROC 231 (5 CR.)**

#### **Clinical Clerkship III**

Prerequisite: ROC 132. Introduces student to intermediate and complex treatment and simulation procedures as well as dosimetry, beam modification devices, and Brach therapy competencies. Students should demonstrate proficiency in equipment manipulation and intermediate care skills. Laboratory 25 hours per week.

### **ROC 232 (5 CR.)**

#### **Clinical Clerkship IV**

Prerequisite: ROC 231. Students perform intermediate procedures with minimal assistance and demonstrate comprehension of tasks related to complex procedures. During this clerkship the student should demonstrate the ability to work more independently. Laboratory 25 hours per week.

## Radiography

Enrollment in RAD courses (except RAD 105) is restricted to students program-placed in the Radiography Program.

### **RAD 105 (2 CR.)**

#### **Introduction to Radiology, Protection, and Patient Care**

Presents brief history of the radiologic profession, code of ethics, conduct for radiologic students, and basic fundamentals of radiation projection. Teaches the care and handling of the sick and injured patient in the radiology department. Introduces the use of contrast media necessary in the investigation of the internal organs. Lecture 2 hours per week.

### **RAD 115 (3 CR.)**

#### **Principles of Magnetic Resonance Imaging**

Prerequisite: ARRT or eligible. Presents concepts of magnetic imaging, magnetic physics, fundamentals of magnetic resonance, and application of these principles. Lecture 3 hours per week.

### **RAD 121 (4 CR.)**

#### **Radiographic Procedures I**

Introduces procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the chest, abdomen, extremities, and axial skeleton. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### **RAD 125 (3 CR.)**

#### **Patient Care Procedures**

Presents the care and handling of the sick and injured patient in the radiology department. Introduces the fundamentals of nursing procedures, equipment, and supplies specific to radiology. Lecture 3 hours per week.

### **RAD 131 (3 CR.)**

#### **Elementary Clinical Procedures I**

Develops advanced technical skills in fundamental radiographic procedures. Focuses on manipulation of equipment, patient care, osseous studies, skull procedures, and contrast studies. Provides clinical experience in cooperating health agencies. Clinical 15 hours per week.

### **RAD 135 (5 CR.)**

#### **Elementary Clinical Procedures II**

Introduces advanced technical skills in fundamental radiographic procedures. Focuses on basic contrast media studies, osseous studies, and skull procedures. Provides clinical experiences in healthcare agencies. Clinical 25 hours per week.

### **RAD 136 (2 CR.)**

#### **Clinical Procedures in Magnetic Resonance Imaging**

Develops technical skills in magnetic resonance procedures. Focuses on manipulation of equipment, patient care, and procedures. Clinical 10 hours per week.

### **RAD 141 (4 CR.)**

#### **Principles of Radiographic Quality I**

Prerequisite: admission to program. Presents factors that control and influence radiographic quality, as well as various technical conversion factors useful in radiography. Discusses automatic film processing, sensitometry, and quality assurance testing. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**RAD 142 (4 CR.)****Principles of Radiographic Quality II**

Prerequisite: RAD 141 and admission to the program. Presents factors that control and influence radiographic quality, as well as various technical conversion factors useful in radiography. Discusses automatic film processing, sensitometry, and quality assurance testing. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**RAD 205 (3 CR.)****Radiation Protection and Radiobiology**

Studies methods and devices used for protection from ionizing radiation. Teaches theories of biological effects, cell and organism sensitivity, and the somatic and genetic effects of ionizing radiation. Presents current radiation protection philosophy for protecting the patient and technologist. Lecture 3 hours per week.

**RAD 215 (1 CR.)****Correlated Radiographic Theory**

Presents intensive correlation of all major radiologic technology subject areas. Studies interrelationships of biology, physics, principles of exposure, radiologic procedures, patient care, and radiation protection. Lecture 1 hour per week.

**RAD 221 (4 CR.)****Radiographic Procedures II**

Continues procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the skull, contrast studies of internal organs, and special procedures employed in the more complicated investigation of the human body. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**RAD 231–232 (5 CR.) (5 CR.)****Advanced Clinical Procedures I–II**

Reinforces technical skills in fundamental radiographic procedures. Introduces more intricate contrast media procedures. Focuses on technical proficiency, application of radiation, protection, nursing skills, and exposure principles. Teaches advanced technical procedures and principles of imaging modalities, correlating previous radiographic theory, focusing on full responsibility for patients in technical areas, perfecting technical skills, and developing awareness of related areas utilizing ionizing radiation. Provides clinical experience in cooperating health agencies. Clinical 25 hours per week.

**RAD 240 (3 CR.)****Radiographic Pathology**

Presents a survey of common medical and surgical disorders that affect radiographic image. Discusses conditions related to different systems of the human body. Studies the correlation of these conditions with radiographs. Lecture 3 hours per week.

**RAD 242 (2 CR.)****Computed Tomography Procedures and Instrumentation**

Prerequisite: ARRT or eligible. Focuses on the patient care, imaging procedures, physics, and instrumentation related to computed tomography imaging. Lecture 2 hours per week.

**RAD 246 (1 CR.)****Special Procedures**

Studies special radiographic and surgical procedures and equipment employed in the more complicated investigation of internal conditions of the human body. Lecture 1 hour per week.

**RAD 247 (3 CR.)****Cross-Sectional Anatomy**

Prerequisite: ARRT or eligible. Presents a specialized study of cross-sectional anatomy relevant to sectional imaging modalities such as computed tomography and magnetic resonance imaging. Lecture 3 hours per week.

**RAD 255 (3 CR.)****Radiographic Equipment**

Studies principles and operation of general and specialized X-ray equipment. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Real Estate

**REA 100 (4 CR.)****Principles of Real Estate**

Examines practical applications of real estate principles. Includes a study of titles, estates, land descriptions, contracts, legal instruments, financing, and management of real estate. Lecture 4 hours per week.

**REA 215 (3 CR.)****Real Estate Brokerage**

Considers administrative principles and practices of real estate brokerage, financial control, and marketing of real property. Lecture 3 hours per week.

<p><b>REA 216</b> (3 CR.)  <b>Real Estate Appraisal</b>  Explores fundamentals of real estate valuation. Introduces the Uniform Standards of Professional Appraisal Practice and the Uniform Residential Appraisal Report formulations, working problems, and reviewing actual appraisals. Includes the opportunities available in the appraisal field. Lecture 3 hours per week.</p>	<p><b>REA 236</b> (1 CR.)  <b>State Certified Residential Appraiser</b>  Concentrates on Appraisal Law in the state of Virginia, appraisal practices, principles, and theories with regard to their application to residential properties. Emphasizes the review of terms, concepts, and the valuation theories targeted to the residential examination. Lecture 1 hour per week.</p>
<p><b>REA 217</b> (3 CR.)  <b>Real Estate Finance</b>  Presents principles and practices of financing real estate. Analyzes various types of note contracts and mortgage and deed of trust instruments. Covers underwriting of conventional and government insured and guaranteed loans. Lecture 3 hours per week.</p>	<p><b>REA 238</b> (1 CR.)  <b>Professional Appraisal Standards</b>  Examines the provisions and standard rules that govern professional appraisal practices. Covers the “Binding Requirements” and the “Specific Appraisal Guidelines” as required by the Uniform Standards of Professional Appraisal Practice. Lecture 1 hour per week.</p>
<p><b>REA 218</b> (3 CR.)  <b>Appraising the Single Family Residence</b>  Promotes an understanding and working knowledge of procedures and techniques used to estimate market value of vacant residential land and improved single-family residential properties. Emphasizes the proper application of valuation methods and techniques to residential properties and extraction of data from the market for use in sales comparison, cost, and income capitalization approaches to value. Lecture 3 hours per week.</p>	<p><b>REA 245</b> (3 CR.)  <b>Real Estate Law</b>  Studies real estate law, including rights incidental to property ownership and management, agency, contracts, transfers of real property ownership, fair housing, and tax implications. Lecture 3 hours per week.</p>
<p><b>REA 220</b> (3 CR.)  <b>Income Property Valuation</b>  Prerequisite: REA 216 or equivalent. Familiarizes the student with the techniques that are utilized to perform the appraisal of more complex income-producing properties. Focuses on income and expense forecasting, appropriate techniques for determining capitalization rates, and discounted cash flow method. Includes valuation of complex commercial properties such as apartment complexes, office buildings, shopping centers, industrial properties, hotels, and mixed use complexes. Lecture 3 hours per week.</p>	<p><b>REA 245</b> (3 CR.)  <b>Real Estate Law</b>  Studies real estate law, including rights incidental to property ownership and management, agency, contracts, transfers of real property ownership, fair housing, and tax implications. Lecture 3 hours per week.</p> <p><b>Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.</b></p>
<p><b>REA 225</b> (3 CR.)  <b>Real Property Management</b>  Introduces the field of property management. Focuses on principles of tenant selection and retention, financial management, and building maintenance. Lecture 3 hours per week.</p>	<p><b>REA 245</b> (3 CR.)  <b>Real Estate Law</b>  Studies real estate law, including rights incidental to property ownership and management, agency, contracts, transfers of real property ownership, fair housing, and tax implications. Lecture 3 hours per week.</p>
	<p><b>Recreation and Parks</b></p>
	<p><b>RPK 100</b> (3 CR.)  <b>Introduction to Recreation, Parks, and Leisure Studies</b>  Prerequisite: ENG 111. Includes history and philosophy of the recreation and parks movement. Discusses the theory of leisure and play. Analyzes leisure service delivery systems and career opportunities. Emphasizes the commercial, nonprofit and public sectors, armed forces, and therapeutic recreation, as well as volunteer service. Lecture 3 hours per week.</p>
	<p><b>RPK 120</b> (3 CR.)  <b>Outdoor Recreation</b>  Includes history and philosophy of conservation, preservation, and the development of outdoor recreation in the United States. Emphasizes development of practical skills in planning, instructing, and managing outdoor recreation programs and facilities, including youth resident camps, RV campgrounds, as well as resources in the urban setting. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</p>

**RPK 121 (3 CR.)****Fundamentals of Camp Management**

Includes the history and philosophy of the residential/day camp movement in the United States. Examines camp industry trends regarding specialty camps, camp organizations, programming and operation standards, marketing, insurance, risk management, administration, staffing, training and certification, and improving professional requirements through national certification. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**RPK 125 (3 CR.)****Resource Interpretation and Education**

Prerequisite: ENG 111 and completion of or concurrent enrollment in a CST course. Includes overview of the history of the outdoor education movement. Concentrates on the basic knowledge and skills necessary to design, implement, and present interpretive programs and develop outdoor educational tools. Includes design and construction of interpretive displays using varied materials and all forms of presentation media (print, audio-visual, and computer software). Students will be required to create and present an interpretive program or outdoor education instructional tool. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**RPK 130 (1 CR.)****Caving**

Introduces basic caving techniques, equipment, issues regarding karst resource protection and national organizations dedicated to resource protection, geology, and ecology, as well as cave safety. Laboratory 2 hours per week.

**RPK 131 (1 CR.)****Kayaking**

Prerequisite: ability to swim. Introduces kayaking techniques, water classification, conditioning, safety and destination planning. Includes field experience involving kayaking in multiple environments: flat water, ocean, and whitewater (may require overnight stay). Laboratory 2 hours per week.

**RPK 135 (3 CR.)****Program Planning**

Introduces principles of program planning in the recreation setting. Analyzes participants' needs and demands, as well as social, physical, and psychological characteristics of participation. Explains how to organize and implement programs and special events. Requires a 32-hour service-learning project off campus. Lecture 3 hours per week.

**RPK 140 (1 CR.)****Land Use Ethics**

Examines the impact of human activity on the outdoor environment, specifically lands used for backpacking, hiking, and camping. Addresses the history and philosophy of the Leave No Trace movement, regarding sustainable backcountry and "at-home" practices, visitor demands, and resource management challenges. Lecture 1 hour per week.

**RPK 141 (3 CR.)****Leadership and Supervision**

Introduces leadership and supervision in the leisure services industry. Assesses leadership styles, traits and leadership theories, and provides the opportunity for students to assess their own individual styles. Addresses group dynamics, conflict, and issues relating specifically to leadership of volunteers. Includes a leadership practicum. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**RPK 146 (3 CR.)****Recreation Facilities Management and Design**

Prerequisites: RPK 100 and ENG 111. Introduces concepts of facilities planning, site analysis, planning and zoning strategies, and landscape design. Emphasizes the creation and maintenance of "people-space." Presents issues regarding community development, needs assessment, facility planning and design, geographic use patterns, and demographics. Includes field experience. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**RPK 150 (1 CR.)****Mountain Biking**

Teaches the sport of mountain biking, equipment, techniques, basic bicycle repair, trail safety and etiquette, trail conflict management, trail development, and destination planning. Laboratory 2 hours per week.

**RPK 151 (1 CR.)****Orienteering**

Introduces orienteering, compass and GPS use, topography, and geocaching as a sport. Teaches map reading, using a compass, decision-making, and team work. Laboratory 2 hours per week.



<p><b>RPK 152</b> (1 CR.)  <b>Sports First Aid and Safety</b>            Focuses on the introduction to first aid protocols, causes, signs and symptoms of injury for coaches, injury prevention, preseason physicals, fitness screenings, conditioning programs and return to play guidelines, injury prevention and risk management, as well as the design and implementation of a medical emergency plan. Course requires successful passage of National Certification Exam. Laboratory 2 hours per week.</p>	<p><b>RPK 180</b> (3 CR.)  <b>Youth Sports Administration</b>            Prepares coaching professionals to develop and implement emotionally and physically healthful youth sports programs. Includes an analysis of the youth sports program planning process including philosophy development, learning styles and outcomes, managing parents and players, skills development, risk management, financial planning, strategic partnerships, and sports event management. Lecture 3 hours per week.</p>
<p><b>RPK 160</b> (2 CR.)  <b>Wilderness First Aid</b>            Examines the role of outdoor professionals in wilderness medicine and the response, care, and rescue of outdoor participants in nonurban environments. Provides intensive, in-depth training in the areas of cardiopulmonary resuscitation, patient assessment system, body systems, environmental injuries/conditions, anaphylaxis, lifting/moving/extrication, patient carries, and backcountry medicine. Course requires successful passage of National Certification Exam. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.</p>	<p><b>RPK 185</b> (1 CR.)  <b>Recreational Camping</b>            Presents camping skills including destination selection, route planning, gear selection and preparation (individual and group), trip safety, packing techniques (from car camping to “going light”), food selection, cooking techniques, and shelter selection. Presents land use ethic of Leave No Trace, permitting requirements, and outdoor skills. Laboratory 2 hours per week.</p>
<p><b>RPK 170</b> (1 CR.)  <b>Recreational Backpacking</b>            Presents backpacking skills including destination selection, route planning, gear selection and preparation (individual and group), trip safety, packing techniques, wilderness medicine and backcountry protocols, food selection, cooking techniques, and clothing selection. Presents land use ethic of Leave No Trace, permitting requirements, and outdoor skills. Laboratory 2 hours per week.</p>	<p><b>RPK 201</b> (3 CR.)  <b>Recreation and Parks Management</b>            Prerequisite: ENG 111 and/or concurrent enrollment in ENG 112. Examines the organization and management of recreation and parks agencies. Discusses theories and principles of management, organizational behavior, budget preparation, hiring practices, personnel management, budget preparation, documentation, and presentation. Examines software specific to recreation facility and program management. Lecture 3 hours per week.</p>
<p><b>RPK 171</b> (1 CR.)  <b>Canoeing</b>            Prerequisite: ability to swim. Introduces the history of canoeing, paddling techniques, safety, water conditions and trip planning related to canoe operation in a river, lake, or ocean environment. Laboratory 2 hours per week.</p>	<p><b>RPK 202</b> (3 CR.)  <b>Leisure Studies Practicum</b>            Prerequisites: RPK 201 and GPA of 3.0. Examines the organization and management of recreation and parks agencies through hands-on experience in an internship placement within a leisure services agency. Develops students’ personal and professional needs and interests by working within a professional setting. Laboratory 6 hours per week.</p>
<p><b>RPK 175</b> (1 CR.)  <b>Rock Climbing</b>            Covers fundamentals of rock climbing, belay skills, gear, and hardware specific to sport climbing. Presents climbing techniques, climbing and climb site safety, knots, and equipment care and maintenance. Laboratory 2 hours per week.</p>	<p><b>RPK 206</b> (1 CR.)  <b>Adventure Ropes Courses</b>            Introduces programs which emphasize the development of self-concept, group cooperation, and physical abilities. Teaches a variety of rope course activities including new games, initiatives, and the high and low rope courses. Includes the use of ropes course apparatus, safety techniques, and sequencing. Laboratory 2 hours per week.</p>

**RPK 210 (3 CR.)****Principles and Psychology of Coaching**

Provides an analysis of volunteer coaching and the coaching profession planning process including philosophy development, learning styles and outcomes, managing parents and players, skills development, risk management, financial planning, drugs, and eating disorders in sport and physical training. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**RPK 220 (4 CR.)****Ecotourism and Sustainable Practices**

Examines the impacts of visitor behavior and ecotourism on natural resources and the management of ecotourism facilities and destinations (governmental and nongovernmental); national and international guidelines for ecotourism; and the response to the increasing growth of ecotourism and eco-travel in the U.S. and abroad and the resulting need for sustainable tourism practices. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**RPK 230 (4 CR.)****Wilderness Medicine**

Examines the role of the outdoor professional in wilderness medicine and the response, care and rescue of outdoor participants in nonurban environments. This is an intensive 72-hour Wilderness First Responder (WFR) course, which provides in-depth training in the areas of cardiopulmonary resuscitation, patient assessment system, circulatory system, respiratory system, lifting, moving and extrication, fractures, stable injuries, nervous system, wounds, burns, principles of trauma, spine injuries, emergency childbirth, toxins, bites, stings, altitude/diving, hypo/hyperthermia, near drowning, frostbite, lightning, allergies, anaphylaxis, medical and legal issues, search and rescue, and personal preparedness. Course requires successful passage of National Certification Exam. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**RPK 255 (3 CR.)****Leisure Services for Persons with Disabilities**

Prerequisites: RPK 100 and ENG 111. Provides historical perspective as well as current theory and practice regarding the delivery of leisure services to people with disabilities. Introduces competencies needed to design, implement, and direct leisure experiences for people of all abilities. Strategies for identifying and removing physical and programmatic barriers are discussed. Examines disability legislation, universal design principles, assistive technology, adaptation techniques and leadership skills. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**RPK 265 (3 CR.)****Risk Management**

Prerequisites: RPK 100 and ENG 111. Discusses the law and liability as they relate to the delivery of leisure services. Teaches practitioners legal principles necessary to analyze programs and facilities with respect to safety, emergency preparedness, and accident reporting protocols. Reviews hiring procedures, ADA compliance, national (CPSC, ASTM, OSHA) and professional standards (NRPA, ACA); certification and training standards (CPRP, CTRS); supervision; and the role of maintenance and insurance. Uses case law and national compliance standards to illustrate legal principles. Lecture 3 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

## Religion

**REL 100 (3 CR.)****Introduction to the Study of Religion**

Explores various religious perspectives and ways of thinking about religious themes and religious experience. Lecture 3 hours per week.

**REL 217 (3 CR.)****Life and Letters of Paul**

Studies the journeys and religious thought of the apostle Paul. Lecture 3 hours per week.

**REL 225 (3 CR.)****Selected Topics in Biblical Studies**

Examines a selected body of literature, a specific book of the Bible, or a pervasive theme. Lecture 3 hours per week.

**REL 231 (3 CR.)****Religions of the World I**

Studies religions of the world with attention to origin, history, and doctrine. Part I of II. Lecture 3 hours per week.

**REL 232 (3 CR.)****Religions of the World II**

Studies religions of the world with attention to origin, history, and doctrine. Part II of II. Lecture 3 hours per week.

**REL 233 (3 CR.)****Introduction to Islam**

Studies Islam in its historical, religious, and political dimensions and assists in the understanding of its contemporary vitality and attraction as a faith, a culture, and a way of life. Lecture 3 hours per week.

**REL 235 (3 CR.)**

**Major Religious Thinkers**

Examines the works of one or more important people in religious thought. Lecture 3 hours per week.

**REL 246 (3 CR.)**

**Christianity**

Examines the origins and historical development of Christianity, its basic metaphysical and theological assumptions and essential doctrines; also examines the present state of the church in the modern world. Lecture 3 hours per week.

**REL 255 (3 CR.)**

**Selected Problems and Issues in Religion**

Examines selected problems and issues of current interest in religion. May be repeated for credit. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

## Respiratory Therapy

Enrollment in RTH courses is restricted to students program-placed in the Respiratory Therapy Program.

**RTH 102 (3 CR.)**

**Integrated Science for Respiratory Care II**

Integrates the concepts of mathematics, chemistry, physics, microbiology, and computer technology as these sciences apply to the practices of respiratory care. Lecture 3 hours per week.

**RTH 111 (3 CR.)**

**Anatomy and Physiology of the Cardiopulmonary System**

Concentrates on anatomy and physiology of the cardiopulmonary system. Lecture 3 hours per week.

**RTH 120 (2 CR.)**

**Fundamental Theory for Respiratory Care**

Presents the theory of basic patient assessment and functional medical terminology. Lecture 2 hours per week.

**RTH 121 (3 CR.)**

**Cardiopulmonary Science I**

Focuses on assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary, renal, and neuromuscular physiology, and pathophysiology. Lecture 3 hours per week.

**RTH 131 (4 CR.)**

**Respiratory Care Theory and Procedures I**

Presents theory of equipment and procedures used for patients requiring general and critical

cardiopulmonary care. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**RTH 135 (2 CR.)**

**Diagnostic and Therapeutic Procedures I**

Focuses on purpose, implementation and evaluation of equipment, and procedures used in the diagnosis and therapeutic management of patients with cardiopulmonary disease. Lecture 1 hour per week. Laboratory 3 hours per week. Total 4 hours per week.

**RTH 145 (2 CR.)**

**Pharmacology for Respiratory Care I**

Presents selection criteria for the use of, and detailed information on, pharmacological agents used in pulmonary care. Lecture 2 hours per week.

**RTH 151 (3 CR.)**

**Fundamental Clinical Procedures I**

Offers clinical instruction in basic patient care practices. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**RTH 215 (1 CR.)**

**Pulmonary Rehabilitation**

Focuses on purpose and implementation of comprehensive pulmonary rehabilitation program. Lecture 1 hour per week.

**RTH 222 (3 CR.)**

**Cardiopulmonary Science II**

Focuses on assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary, renal, and neuromuscular physiology and pathophysiology. Lecture 3 hours per week.

**RTH 225 (3 CR.)**

**Neonatal and Pediatric Respiratory Procedures**

Prerequisite: RTH 222 or permission of the program director. Focuses on the cardiopulmonary, physiology, pathology, and application of therapeutic procedures in the management of the newborn and pediatric patient. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**RTH 227 (2 CR.)**

**Integrated Respiratory Therapy Skills II**

Presents intensive correlation of all major respiratory therapy subject areas reflecting the entry-level and advanced practitioner matrices. Emphasizes assessment, implementation, and modification of therapy to patient response. Lecture 2 hours per week.

**RTH 236 (3 CR.)****Critical Care Monitoring**

Prerequisite: completion of all first and second semester required courses or permission of the program head. Focuses on techniques and theory necessary for the evaluation and treatment of the critical care patient. Explores physiologic effects of advanced mechanical ventilation. Lecture 2 hours per week. Laboratory 3 hours. Total 5 hours per week.

**RTH 245 (2 CR.)****Pharmacology for Respiratory Care II**

Concentrates on pharmacologic agents used in the management of the critically ill patient. Lecture 2 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Russian****RUS 101-102 (4 CR.) (4 CR.)****Beginning Russian I-II**

Prerequisite for RUS 102: RUS 101. Develops the understanding, speaking, reading, and writing of Russian, and emphasizes the structure of the language. Lecture 5 hours per week.

**RUS 201-202 (3 CR.) (3 CR.)****Intermediate Russian I-II**

Prerequisite for RUS 201: RUS 102 or equivalent. Prerequisite for RUS 202: RUS 201. Continues the development of the skills of understanding, speaking, reading, and writing of Russian. Class conducted in Russian. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Safety****SAF 130 (1 CR.)****Industrial Safety – OSHA 10**

Presents an introduction to occupational health and safety and its application in the workplace. Emphasizes safety standards and the Occupational Safety and Health Act (OSHA), its rules and regulations (OSHA 10). Lecture 1 hour per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Sign Communications**

See American Sign Language (ASL) or Interpreter Education (INT).

**Social Science****SSC 115 (3 CR.)****Introduction to Global Affairs**

Surveys wide range of global topics: previous periods of globalization, international organizations and law, transnational corporations and global economy, immigration and refugees, world environmental concerns, world culture, war and peace, paradoxical presence of nationalism and fundamentalism in global world, and anti-globalization movement. Lecture 3 hours per week.

**SSC 205 (3 CR.)****Cultural and Social Study of Women**

Analyzes historical and contemporary social, cultural, political, and economic factors affecting the role of women. Uses selected literature about women in the modern world as a basis for study and discussion. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Sociology****SOC 200 (3 CR.)****Principles of Sociology**

Introduces fundamentals of social life. Presents significant research and theory in areas such as culture, social structure, socialization, deviance, social stratification, and social institutions. (Students who take SOC 200 cannot receive credit for either SOC 201 or SOC 202). Lecture 3 hours per week.

**SOC 201-202 (3 CR.) (3 CR.)****Introduction to Sociology I-II**

Introduces basic concepts and methods of sociology. Presents significant research and theory in areas such as socialization, group dynamics, gender roles, minority group relations, stratification, deviance, culture, and community studies. Includes research and theories on population; social change; and social institutions (family, education, religion, political system, economic system). (Students who take SOC 200 cannot receive credit for either SOC 201 or SOC 202). Lecture 3 hours per week.

**SOC 211–212 (3 CR.) (3 CR.)****Principles of Anthropology I–II**

Inquires into the origins, development, and diversification of human biology and human cultures. Includes fossil records, physical origins of human development, human population genetics, linguistics, cultures' origins and variation, and historical and contemporary analysis of human societies. Lecture 3 hours per week.

**SOC 215 (3 CR.)****Sociology of the Family**

Studies topics such as marriage and family in social and cultural context. Addresses the single scene, dating and marriage styles, child-rearing, husband and wife interaction, single parent families, and alternative lifestyles. Lecture 3 hours per week.

**SOC 236 (3 CR.)****Criminology**

Studies research and causal theories of criminal behavior. Examines crime statistics, crime victims, and types of criminal offenses. Introduces role of police, judicial, and correctional system in treatment and punishment of offenders. Lecture 3 hours per week.

**SOC 245 (3 CR.)****Sociology of Aging**

Introduces study of aging with special emphasis on later stages of the life cycle. Includes theories of aging, historical and comparative settings, social policy, and future trends of aging. Lecture 3 hours per week.

**SOC 247 (3 CR.)****Death and Dying**

SOC 247 and PSY 266 cannot both be taken for credit toward graduation. Studies theoretical, practical, and historical aspects of death. Focuses upon student's own ideas, feelings, and attitudes toward death and dying and the significance and consequences of those attitudes. Lecture 3 hours per week.

**SOC 255 (3 CR.)****Comparative Sociology**

Analyzes varieties of human behavior, beliefs, and values in Western and non-Western cultures. Emphasizes similarities and variations among social institutions such as family, law, religion, economics, and government. Lecture 3 hours per week.

**SOC 266 (3 CR.)****Race and Ethnicity**

Investigates minorities such as racial and ethnic groups. Addresses social and economic conditions promoting prejudice, racism, discrimination, and segregation. Lecture 3 hours per week.

**SOC 268 (3 CR.)****Social Problems**

Applies sociological concepts and methods to analysis of current social problems. Includes delinquency and crime, mental illness, drug addiction, alcoholism, sexual behavior, population crisis, race relations, family and community disorganization, poverty, automation, wars, and disarmament. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Spanish****SPA 17 (3 CR.)****Spanish for the Tourist**

Introduces spoken Spanish to people intending to travel in a Spanish-speaking country. Lecture 3 hours per week.

**SPA 101–102 (4 CR.) (4 CR.)****Beginning Spanish I–II**

Prerequisite for SPA 102: SPA 101. Introduces understanding, speaking, reading, and writing skills, and emphasizes basic Spanish sentence structure. Lecture 4 hours per week.

**SPA 103–104 (3 CR.) (3 CR.)****Basic Spoken Spanish I–II**

Prerequisite for SPA 104: SPA 103. Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

**SPA 115 (5 CR.)****Intensive Beginning Spanish**

Develops understanding, speaking, reading, and writing skills through the Beginning level of Spanish. Covers the material in SPA 101 and 102 in an accelerated one-semester format. Strengthens, reviews and refines the concepts of SPA 101 and SPA 102 for students who have had previous Spanish language instruction or exposure but who are not ready for SPA 201 Intermediate Spanish. May include one additional hour of oral practice per week. Lecture 5 hours per week.

**SPA 150 (3 CR.)****Spanish for Law Enforcement**

Introduces Spanish to those in the criminal justice field. Emphasizes oral communication and practical firsthand police and justice vocabulary. May include oral drill and practice. Lecture 3 hours per week.

**SPA 163–164 (3 CR.) (3 CR.)****Spanish for Health Professionals I–II**

Prerequisite for SPA 164: SPA 163. Introduces Spanish to those in the health sciences. Emphasizes oral communication and practical medical vocabulary. May include oral drill and practice. Lecture 3 hours per week.

**SPA 201–202 (3 CR.) (3 CR.)****Intermediate Spanish I–II**

Prerequisite for SPA 201: SPA 102 or equivalent. Prerequisite for SPA 202: SPA 201. Continues to develop understanding, speaking, reading, and writing skills. Spanish is used in the classroom. Lecture 3 hours per week.

**SPA 205–206 (3 CR.) (3 CR.)****Spanish for Heritage Speakers I–II**

Prerequisite for SPA 206: SPA 205. Fosters appreciation of Hispanic cultural-linguistic heritage. Develops understanding, speaking, reading, and writing skills to native or near-native level. Focuses on reading development, orthography, lexical expansion, formal grammar, facility in writing and composition, and an introduction to selected representations of literary texts. Lecture 3 hours per week.

**SPA 211–212 (3 CR.) (3 CR.)****Intermediate Spanish Conversation I–II**

Prerequisite: SPA 202 or equivalent. Prerequisite for SPA 212: SPA 211. Continues to develop fluency through emphasis on idioms and other complex sentence structures. Lecture 3 hours per week.

**SPA 233 (3 CR.)****Introduction to Spanish Civilization and Literature I**

Prerequisite: SPA 202 or equivalent. Introduces the student to Spanish culture and literature. Readings and discussions conducted in Spanish. Lecture 3 hours per week.

**SPA 241–242 (3 CR.) (3 CR.)****Intermediate Spanish Composition I–II**

Prerequisite: SPA 202 or equivalent. Prerequisite for SPA 242: SPA 241. Develops skills in written Spanish, emphasizing grammatical correctness. Lecture 3 hours per week.

**SPA 271–272 (3 CR.) (3 CR.)****Introduction to Latin American Civilization and Literature I–II**

Prerequisite: SPA 202 or equivalent. Prerequisite for SPA 272: SPA 271. Introduces the student to Latin American culture and literature. Readings and discussions conducted in Spanish. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Speech and Drama**

See Communication Studies and Theatre (CST).

**Student Development****SDV 100 (1 CR.)****College Success Skills**

Assists students to make a successful transition to college. Provides students with the academic tools for success and teaches the skills of self-management and self-responsibility that relate to being a successful student. Helps students learn how to make responsible choices about their academic, personal, and career goals. Provides information about the College and community resources, the College’s policies and procedures, and the processes of moving effectively through the educational system. Strongly recommended for beginning students; first-time college students are required to take SDV 100 or another SDV course before enrolling for their 16th semester hour at the College. Lecture 1 hour per week.

**SDV 101 (1 CR.)****Orientation to (a Specific Discipline)**

Introduces students to the skills necessary to achieve their academic goals, to the services offered at the College, and to the discipline in which they are enrolled. Covers topics such as learning resource services; counseling and advising; listening, test-taking, and study skills; and topical areas specific to their particular discipline. Lecture 1 hour per week.

**SDV 106 (1 CR.)****Preparation for Employment**

Provides experience in resume writing, preparation of applications, letters of application, and successfully preparing for and completing the job interview. Assists students in identifying their marketable skills and aptitudes. Develops strategies for a successful employment search. Assists students in understanding effective human relations techniques and communication skills in job search. Lecture 1 hour per week.

**SDV 107 (2 CR.)****Career Education**

Surveys career options available to students. Stresses career development and assists in the understanding of self in the world of work. Assists students in applying decision-making to career choice. Lecture 2 hours per week.



**SDV 109 (1 CR.)****Student Leadership Development**

Provides opportunities for students to learn leadership theory and skills for application in campus organizations, committees, and groups. Lecture 1 hour per week.

**SDV 195 (1–5 CR.)****Topics In:**

Please refer to the current *Schedule of Classes* for the specific topics for these titles.

**SDV 295 (1–5 CR.)****Topics In:**

Please refer to the current *Schedule of Classes* for the specific topics for these titles.

**SDV 298 (1–5 CR.)****Seminar and Project:**

Please refer to the current *Schedule of Classes* for the specific topics for these titles.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

## Travel and Tourism

See also Hospitality Management (HRI).

**TRV 100 (3 CR.)****Introduction to the Travel Industry**

Presents an overview of the structure and scope of the travel industry with emphasis on job categories and functions, basic vocabulary, and the interrelationships of the various components. Includes the study of information displays of the airline computer reservation system. Lecture 3 hours per week.

**TRV 111–112 (3 CR.) (3 CR.)****Geography of Tourism I–II**

Focuses on the geographic knowledge necessary to provide effective, efficient service to clients. Studies major Western hemisphere (Part I) and Eastern hemisphere (Part II) destinations. Emphasizes features of touristic importance, such as visit documentation, climate and physical features, accommodations and attractions, and accessibility. Lecture 3 hours per week.

**TRV 125 (3 CR.)****Travel Sales and Customer Service**

Prerequisite: TRV 100. Studies successful selling strategies in the travel business. Analyzes selling techniques by types of travel clientele and their needs. Emphasizes the development of basic selling skills through role playing exercises and sales presentations. Lecture 3 hours per week.

**TRV 138–139 (3 CR.) (3 CR.)****Regional Tour Guiding I–II**

Studies the knowledge and skills necessary to become a regional tour guide. Covers the practical elements of tour guiding including regulations, licensing procedures, and marketing as well as the information necessary to give tours in the regional area. Includes national and local history, regional geography, architecture, government and political history, museums, flora and fauna, local personalities, and major sites of tourist interest. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

## Veterinary Technology

Enrollment in VET courses is restricted to students program-placed in the Veterinary Technology Program.

**VET 105 (3 CR.)****Introduction to Veterinary Technology**

Introduces the role of veterinary technicians in veterinary practice. Includes medical terminology, ethics, professionalism, and basic concepts of patient care. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**VET 111 (4 CR.)****Anatomy and Physiology of Domestic Animals**

Introduces the structure and function of the animal and of all the organ systems of common domestic animals, including histology, embryology, and genetics. Includes laboratory dissection and demonstrations. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**VET 116 (3 CR.)****Animal Breeds and Behavior**

Surveys common species of domestic animals, including basic husbandry, care, and handling. Introduces identification of various breeds and their characteristics, including behavior patterns, problems, and solutions. Lecture 3 hours per week.

**VET 121 (3 CR.)****Clinical Practices I**

Presents clinical techniques commonly performed in veterinary practice. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**VET 122 (3 CR.)****Clinical Practices II**

Prerequisite: VET 121. Presents clinical techniques commonly performed in veterinary practice. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**VET 131 (3 CR.)****Clinical Pathology I**

Surveys techniques used in the veterinary hospital laboratory, including hematology, urinalysis, microbiology, cytology, immunology, clinical chemistry, serology, and necropsy. Emphasizes the use of microscope, automated laboratory equipment, and modern diagnostic procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**VET 132 (3 CR.)****Clinical Pathology II**

Prerequisite: VET 131. Surveys techniques used in the veterinary hospital laboratory, including hematology, urinalysis, microbiology, cytology, immunology, clinical chemistry, serology, and necropsy. Emphasizes the use of microscope, automated laboratory equipment, and modern diagnostic procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**VET 133 (3 CR.)****Clinical Pathology III**

Prerequisites: VET 131 and 132. Surveys techniques used in the veterinary hospital laboratory, including hematology, urinalysis, microbiology, cytology, immunology, clinical chemistry, serology, and necropsy. Emphasizes the use of microscope, automated laboratory equipment, and modern diagnostic procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**VET 135 (2 CR.)****Anesthesia of Domestic Animals**

Prerequisite: MTH 133 or equivalent. Introduces the basic principles of anesthesia of common domestic species. Includes techniques of induction, monitoring, and recovery of patients using injectable and inhalation anesthetics. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**VET 211–212 (2 CR.) (2 CR.)****Animal Diseases I–II**

Describes animal health and disease, surgical techniques used, and animal behavior. Includes demonstrations and selected observation and practice in animal hospitals, clinics, or research laboratories. Lecture 2 hours per week.

**VET 214 (2 CR.)****Animal Dentistry**

Introduces the basic principles of dental care for common domestic species. Includes dental anatomy, nomenclature, common oral pathology, record systems, instrumentation, dental prophylaxis, common dental treatments, intraoral dental

radiography, and local anesthesia techniques. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**VET 216 (2 CR.)****Animal Pharmacology**

Prerequisite: CHM 101 or equivalent. Studies drugs and other medical substances of veterinary importance, including their characteristics, usage, measurement, dosage, administration, and also pharmacy management. Lecture 2 hours per week.

**VET 217 (2 CR.)****Introduction to Laboratory, Zoo, and Wildlife Medicine**

Focuses on the identification, captive management, restraint and diseases of fish, reptiles, birds, rodents, rabbits, ferrets, primates, wild carnivores, and wild herbivores. Presents the fields of laboratory research zoological medicine. Lecture 2 hours per week.

**VET 221 (4 CR.)****Advanced Clinical Practices III**

Prerequisites: VET 121–122, VET 135, and VET 214. Presents advanced clinical techniques commonly performed in veterinary practice. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

**VET 235 (3 CR.)****Animal Hospital Management and Client Relations**

Introduces the basic concepts of business procedures of veterinary practice, including communication skills, office management, record keeping, and use of computers in veterinary practice. Lecture 3 hours per week.

**VET 290 (4 CR.)****Coordinated Internship: A Preceptorship in Veterinary Technology**

On-the-job training with a licensed professional in a veterinary hospital or clinical setting, approved by the College. Four credits are required for the A.A.S. in Veterinary Technology.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.**

**Viticulture and Enology**

Please see VEN courses under Horticulture.

## Welding

### **WEL 116 (2 CR.)**

#### **Welding I (Oxyacetylene)**

Teaches oxygen/acetylene welding and cutting including safety of equipment, welding, brazing and soldering procedures, and cutting procedures. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

### **WEL 120 (2 CR.)**

#### **Introduction to Welding**

Introduces history of welding processes. Covers types of equipment, and assembly of units. Stresses welding procedures such as fusion, nonfusion, and cutting oxyacetylene. Introduces arc welding. Emphasizes procedures in the use of tools and equipment. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

### **WEL 121 (2 CR.)**

#### **Arc Welding**

Studies the operation of AC and DC power sources, weld heat, polarities, and electrodes for use in joining various alloys by the SMAW process. Covers welds in different types of joints and different welding positions. Emphasizes safety procedures. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

### **WEL 122 (3 CR.)**

#### **Welding II (Electric Arc)**

Prerequisite: WEL 121 or instructor's approval. Teaches electric arc welding, including types of equipment, selection of electrodes, safety equipment and procedures, and principles and practices of welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **WEL 126 (3 CR.)**

#### **Pipe Welding I**

Prerequisite: WEL 122 or instructor's approval. Teaches metal arc welding processes including the welding of pressure piping in the horizontal, vertical, and horizontal-fixed positions in accordance with section IX of the ASME Code. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **WEL 127 (3 CR.)**

#### **Pipe Welding II**

Prerequisite: WEL 126 or instructor's approval. Provides practice in the welding of pressure piping in the horizontal, vertical, and fixed positions. Laboratory 9 hours per week.

### **WEL 130 (3 CR.)**

#### **Inert Gas Welding**

Introduces practical operations in the uses of inert-gas-shield arc welding. Discusses equipment, safety

operations, welding practices in the various positions; shielded gases, filler rods, process variations, and applications; and manual and semi-automatic welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **WEL 141-142 (3 CR.) (3 CR.)**

#### **Welder Qualification Tests I-II**

Studies techniques and practices of testing welded joints through destructive and nondestructive tests; guiding; discoloration heat test; porous examinations; and tensile, hammer, and free bend tests. Also studies visual, magnetic, and fluorescent tests. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **WEL 145 (3 CR.)**

#### **Welding Metallurgy**

Prerequisites: WEL 122, WEL 141, WEL 150, and MTH 111 or instructor's approval. Studies steel classifications, heat treatment procedures, and properties of ferrous and nonferrous metals. Discusses techniques and practices of testing welded joints and destructive/nondestructive, visual magnetic, and fluorescent testing. Lecture 3 hours per week.

### **WEL 146 (3 CR.)**

#### **Welding Quality Control**

Prerequisites: WEL 142, WEL 150, and MTH 111 or instructor's approval. Teaches techniques and practices of inspection and interpretation of tests and measurements. Includes radiographic tests of joints of unlimited thickness welded in 3G and 4G positions. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### **WEL 150 (2 CR.)**

#### **Welding Drawing and Interpretation**

Teaches fundamentals required for successful drafting as applied to the welding industry, including blueprint reading, geometric principles of drafting and freehand sketching, basic principles of orthographic projection, preparation of drawings, and interpretation of symbols. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

### **WEL 160 (3 CR.)**

#### **Semi-Automatic Welding Processes**

Introduces semi-automatic welding processes with emphasis on practical application. Includes the study of filler wires, fluxes, and gases. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.**

# EMERITUS

To be eligible for the rank of emeritus, a retired member of the College (usually holding rank of associate professor or professor) has given a minimum of ten years of service in the Virginia Community College System and has made meritorious and significant contributions to the College.

## President Emeritus

Ernst, Richard J.  
Templin, Robert G.

## Emeritus Faculty

Aiello, Nancy  
Alford, Terry  
Allaire, Ruth Ann  
Allen, Walter G  
Archer, Chalmers, Jr.  
Atchison, Evelyn  
Bachtell, Janice  
Bailey, Sandra  
Baker, Alison  
Baldwin, Susan  
Banas, Ed  
Banks, Anne J.  
Bassett, Max. L.  
Bedont, Sally A.  
Beene, Joe  
Beeson, Sandra  
Beltran, Michol  
Bigelow, John H.  
Billups, Frederick H.  
Bizier, Patricia  
Blair, Katherine  
Blois, Beverly, Jr.  
Blunt, Rosalind  
Bone, Gerald P.  
Bosch, Leslie  
Bradford, Arnold J.  
Brantley, Jill Niebrugge  
Brogan, Barbara  
Bromley, Haworth  
Brunner, Robert  
Bulmer, Walter  
Burgess, J. Fred  
Burton, Jon  
Cahoon, Lynn  
Campbell, Gillie Wilson  
Capps, John R.  
Carlton, Donna  
Carter, Eltse B.  
Carter, Joseph M.  
Carter, Thomas E.  
Casabianca, Lynn  
Catoe, Rodwell  
Cavagnaro, Dorothy  
Chambers, Barbara F.  
Chen, Chih-Mei L.  
Chu, Gen Sen

Coleman, Edward A.  
Conerly, Brenda Faye  
Cook, Gordon  
Craig, Sheila  
Croft, Blanton O.  
Deardon, Z. Thomas  
Deavers, Patricia B.  
Delaney, Brian J.  
Daron, Patricia R.  
Delano, Willard A.  
Delmore, Marian  
DelPopolo, Anthony J., Sr.  
Dennin, Marjorie C.  
Denton, Irving L.  
Depczenski, Robert G.  
Devers, Donald  
Dickson, Elizabeth  
Dixit, Dhruv  
Dixon, Elizabeth  
Doan, Tri  
Domenichetti, Madonna  
Doyle, Terrence A.  
Eckerlin, Ralph P.  
Ellis, B.J.  
Ellis, Tom  
Elsberg, Constance  
Emory, Winola Frances  
Eyer, Patricia H.  
Felt, David  
Fiorillo, Rudolph  
Flemming, Frederick F.  
Flynn, Mary  
Foley, Brian P.  
Ford, Ann  
Frantz, Donald H., Jr.  
Freedman, Edward P.  
Frieband, Michael  
Frye, Sherman  
Fuchsman, Alvin A.  
Furcolow, Robert E.  
Garrigan, George  
Gary, Patricia Knight  
Gibbs, Guy F.  
Gillette, Pauline  
Gleeson, Nancy Beatty  
Glick, D. Marvin  
Goldberg, Ellen  
Goodine, Jean F.  
Gorham, Robin  
Grant, Judith  
Graves, Virginia H.

Gregory, Donald  
Groff, Rebecca W.  
Gronlund, Mildred C.  
Grubb, Donald J.  
Guandolo, Anne  
Guntner, Talula  
Hall, Janet Lee  
Hamilton, Lander C.  
Hammer, Elizabeth  
Hanrahan, Mary  
Hansen, Brian  
Hanson, Henry  
Hardy, Thomas W.  
Harmon, Henry C  
Harris, Richard  
Harrison, Elizabeth  
Harrison, Mary Inez  
Harrison, William A.  
Harwood, Velma E  
Hayden, J. Dunstan  
Hecklinger, Fred J.  
Hedley, Alice  
Heiges, Janice  
Heneghan, Beverly  
Heneghan, Michael  
Hill, William C.  
Hinton, Hortense  
Hoagland, Nancy  
Hoagland, Rosalind  
Hogan, Jean  
Holladay, Van Dale  
Holley, Horace Clinton  
Holt, Barbara  
Horn, Jean  
Horobetz, Joseph S.  
Horowitz, Josef R.  
Howsmon, Wilfred B., Jr.  
Hinton-Jackson, Hortense B.  
Huber, William E  
Huddleston, Thomas M  
Huston, F. Kenneth  
Hutcheon, Wallace S.  
Idle, Bonnie  
Jay, Mary B  
Johnson, Ellen K  
Johnson, Mariette  
Kallen, Vivian M.  
Kamen, Rebecca  
Kevorkian, George  
Kheradmand, Bahman H.  
Kilmer, Robert

Kinnaman, Marjorie  
 Kinsella, William E., Jr  
 Kirkbride, Eunice B.  
 Klinko, Ann Marie  
 Koberg, Robert W.  
 Kohls, Steve  
 Krieghoff, Claudio  
 Laedtke, Elmer C.  
 Laws, Thomas F.  
 Leggat, John Bruce  
 Lembo, Frank J.  
 Lesansky, Helene T.  
 Lesman, Ann St. Clair  
 Lesman, Robert G.  
 Lieberman, Elizabeth S.  
 Lilley, Charles R.  
 Linville, Larry J.  
 Liu, Margaret K.  
 Lizondo, Mary Ann  
 Lobstein, Marion  
 Loser, Robert C.  
 Lunt, Patricia T.  
 Luquire, Karen  
 Majewski, Walerian  
 Marette, Michel  
 Marx, Barbara S.  
 Massie, Byron  
 May, Dennis  
 McCampbell, William  
 McCartney, Herbert E.  
 McDaniel, William  
 McElroy, Patricia  
 McFadden, Theresa K.  
 McGinnis, Wyatt  
 McNamara, Nancy  
 McVeigh, Paul  
 Michener, Randolph  
 Miller, Eula M.  
 Melton, Charles  
 Michel, Moses  
 Michaels, David  
 Miller, Ervinia (Venus)  
 Miller, Sara  
 Montero, Joseph G.  
 Moore, George C.  
 Moran, Lisa  
 Mowbray, Carol  
 Mustachio, James A.  
 Narney, Pamela A.  
 Naclerio, June A.  
 Neal, Douglas A.  
 NeSmith, C. Mary B.  
 Netherton, Jean C.  
 Niner, Elaine  
 Noell, Laura K.  
 Oandasan, Carol  
 O'Connor, James A.  
 Olsen, Fred H.  
 Ooandasan, Carol  
 Painter, Harry F.  
 Palumbo, Len  
 Palumbo, Leonard L.  
 Pape, Lynn  
 Partlow, Jack W.  
 Pearson, Nellie  
 Pellerin, Richard  
 Peterson, Betty L.  
 Petrella, Robert L.  
 Poland, Charles, Jr.  
 Popeck, John H.  
 Poulakis, Victoria  
 Primus, Virginia  
 Raphaeli, Ellen  
 Reed, Patrick  
 Reichbart, Howard E.  
 Reister, Rebecca  
 Reynolds, Daniel J.  
 Reynolds, Jimmie  
 Reynolds, R. Neil  
 Riggan, Judith M.  
 Riley, Daniel W.  
 Robinson, Percy E.  
 Rortvedt, Sylvia  
 Rosen, Deborah M.  
 Roth, Carolyn  
 Rynn, Maria  
 Sabol, Cathy E.  
 Sage, Henry (Jud)  
 Samuels, Joyce  
 Saperstone, Barbara  
 Saray, Sovanny  
 Sasscer, Larry  
 Sasscer, Monica F.  
 Selinger, Barry  
 Scarborough, Charles W. (Jr)  
 Schran, William  
 Schurman, Lydia C.  
 Schwalje, John M.  
 Seaman, Barbara  
 Sellers, Martha W.  
 Selinger, Barry  
 Serbousek, Jane  
 Seward, Dale  
 Seyler, Dorothy U.  
 Shahan, Michael E.  
 Shannon, William T.  
 Shapira, Lawrence  
 Sharpe, Susan  
 Shaw, Mary L.  
 Sheridan, Genevieve  
 Shuler, Cecil  
 Sichenze, Celeste M.  
 Simmons, Howard  
 Simmons, Linda J.  
 Simpson, Cathy A.  
 Sinn, Leslie  
 Sinwell, Carol  
 Sipple, M. Noel  
 Smith, Lois H.  
 Smith, Robert L.  
 Smith, Vme Edom  
 Sparling, Beatrice  
 Stanclift, William  
 Stites, Mary L.  
 Stukenbroeker, Fern  
 Sullivan, Carol  
 Sullivan, Jenny  
 Sumner, Patsy  
 Swanson, A. Kenneth  
 Taormina, Agatha  
 Tardd, Anthony C. (Tony)  
 Taylor, Alice  
 Taylor, David L.  
 Taylor, Jane B.  
 Taylor, Linda M.  
 Tebow, Duncan  
 Tebow, Elizabeth  
 Terwilliger, Gloria P.  
 Thomas, Ruth G.  
 Tiffany, James R.  
 Thompson, Bruce Leggat  
 Thompson, Diane P.  
 Thompson, Merle O'Rourke  
 Thompson, Richard  
 Townend, Jayne  
 Trachtman, Sherry  
 Tredway, M'Kean  
 Trott, Edith  
 Tumminia, Patricia  
 Turpyn, Ann C.  
 Tychsen, Charles E.  
 Tyler, Barbara  
 Underwood, Larry S.  
 Vespucci, Paul  
 Vessey, Cyrilla M.  
 Vezina, Louise  
 Voss, Mary  
 Wade, Evelyn  
 Wagner, Susan  
 Walker, Edwin  
 Wall, James  
 Ward, Virginia  
 Warden, Marietta E.  
 Ware, Elizabeth  
 Watkins, Gladys  
 Weinfield, Ann Marie  
 Wertman, Ellen R.  
 Westburg, Rosemarie  
 Wharff, Sherill A.  
 Wheeler, Lawrence  
 White, Dee Wayne  
 Wilan, Barbara S.  
 Wilan, Richard  
 Wilkin, Cathy

Wilkin, Jonathan L.  
Wiltshire, Cecilia  
Williams, Barbara Laime  
Williams, David L.  
Williams, Edith W.  
Williams, Millicent J.  
Wilson, Diane  
Withers, Wistar M.  
Wolfe, Clarence  
Wooldridge, John B., Jr.  
Wurzer, Dale  
Wyles, Barbara  
Zamani, Maryam  
Zimmerman, Mary



## CLASSIFIED STAFF EMERITUS

The Classified Staff Emeriti Award is given to retired classified staff members who have provided outstanding service to the College or the Virginia Community College System and who have worked a minimum of ten years.

### Classified Staff Emeriti

Ackerman, Claire  
Bailey, Lin A.  
Barnes, Geraldine C.  
Beltran, Michol  
Bender, Rita  
Bixler, Joyce  
Bosch, Leslie V.  
Bowden, Julia I.  
Bradley, Carol N.  
Bridge, Geraldine  
Brockman, Timothy  
Bromley, Haworth P.  
Brown, Julia R.  
Brunner, Adella E.  
Buchanan, Ronald T.  
Burton, Jon C.  
Bush, Janet  
Cain, Joyce  
Campbell, Francina  
Campbell, Gillie  
Carro, Ann  
Catoe, Rodwell M.  
Chambers, Henry  
Chin, Rose S.  
Chung, Yong  
Cirillo, John  
Clark, Maria Teresa  
Clouser, Richard  
Courter, David E.  
Creed, Cheryl  
David, Sheri I.  
Davis, Ronald D.  
Dennett, Johan E.  
Diguseppi, Virginia  
Doan, Tri Q.  
Dudley, William  
Ehle, John V., Jr.  
Ekstrom, LuAnn  
Emery, Joyce  
Farmer, Susan  
Figueroa, Carmen R.  
Filanowski, Connie V.  
Fisher, Marsha N.  
Fochtman, Diane D.  
Fritz, Eve  
Fuller, Suzanne  
Gargus, George L.  
Gargus, Mary Ellen  
Gentry, Bill  
Gibson, Roger K.  
Golding, John P.

Gordon, Fredericka H.  
Gorey, Carol  
Green, Ann M.  
Gulbrandsen, Anita  
Hanrahan, Mary D.  
Harris-Lyne, Frankie L.  
Hedley, Alice M.  
Heffren, R. Jean  
Henry, Nell C.  
Herzfeld, Louise  
Hill, Patti A.  
Hineline, Doris A.  
Horgan, Claire D.  
Idle, Bonnie  
Karstens, David K.  
Kerns, Diana  
Kilgore, Jerre  
Koehnke, Lois  
Kohls, Steven L.  
Krause, Mary W.  
Krogh, Leslie A.  
Lavis, David A.  
Laws, Violet  
Loser, Robert C.  
Mackereth, Carlene R.  
Majewski, Walerian W.  
Marr, Barbara  
Martin, Danelle A.  
Massey, Marjorie  
McCleary, William  
Meehan, Geraldine  
Mickey, Diane D.  
Mirehouse, Marion  
Mirko, Jane B.  
Montemerlo, Mary Beth  
Mooney, Ann M.  
Moran, Lisa R.  
Mullins, Bobbie J.  
Newsome, Eloise C.  
O'Connor, Doreen A.  
Olofson, Doris B.  
Payne, Patricia  
Perlstein, Larry  
Perrier, Gregory K.  
Pohanka, Doris S.  
Porta, Giulio  
Pruitt, E. Jean  
Radford, Delores  
Rassai, Rassa  
Romano, Gwendolyn  
Rosen, Deborah M.  
Sadler, Diana B.

Saray, Sovanny  
Savkar, Reva A.  
Scarborough, Charles W.  
Scida, Merrilee  
Seitz, Penny  
Shaffer, Margaret M.  
Sheble, Karen K.  
Shellington, Janis L.  
Shue, Sharon  
Simpson, Cathy A.  
Smith, Barbara K.  
Smith, Maren  
Smith, Pearl  
Smith, Steve  
Smith, Thomas W.  
Sorbello, Louise  
Sorenson, Eileen M.  
Stafford, Nancy N.  
Stanton, Ruth P.  
Stevenson, Susanne M.  
Sutherland, Ella May  
Tancreti, Roger J., Jr.  
Tedros, Michael J.  
Templin, Robert G., Jr.  
Thomas, Rebecca  
Tyler, Barbara  
Vandevender, Donna M.  
Vessey, Kathleen P.  
Weaver, Claire A.  
Webb, Robert S., Jr.  
Wellman, Carolyn J.  
Wichelt, Sonya  
Woodke, Robert S.  
Woods, Joseph  
Wyatt, Nancy V.  
Vess, Rolland  
Yellman, Edward  
Zamani, Maryam  
Ziolkowski, Margaret

# ADVISORY COMMITTEES

## Accounting

**Janet Faughnan**, Instructor, George Mason University  
**Jeanette M. Franzel**, Board Member, Public Company Accounting Oversight Board  
**Dan George**, Supervisory Senior Auditor, Cotton & Company  
**Joseph Harvey**, Recruiting Manager, Robert Half Finance Accounting  
**Joseph Kull**, Director, Prince William County  
**Marshall McEwan**, Senior Professional Accountant, Computer Science Corporation  
**Eileen M. Owen**, Senior Audit Associate in the Federal Audit Practice, KPMG, LLP  
**Steve Saah**, Director of Permanent Placement Service, Robert Half International, Inc.

## Administration of Justice

This committee is being restructured.

## Air Conditioning/Refrigeration

**Linda Couch**, Chief Operating Officer, Parrish Services, Inc.  
**Merry Beth Hall**, Director of Apprentice and Journeyman Training, PHCC Educational Foundation  
**Jim Kashickey**, Branch Manager, United Refrigeration  
**Matt Kemp**, Sales Manager, AIRECO Supply, Inc.  
**David S. Kyle II**, General Manager and President, Tradesmaster Service Corporation  
**Roger Moore**, HVACR/Electrical Department Manager  
**Charles Moran, III**, Moran's Refrigeration Services, Inc.  
**Jeremy Smith**, President, Edge HVAC

## American Sign Language/ Interpreting

This committee is being restructured.

## Architecture Technology

**Raj Barr-Kumar**, President, Barr International LLC  
**Luis Boza**, Dean of Admission, The Catholic University of America  
**Craig Deering**, Principal, RTK Associates, Inc.  
**Marcia Feuerstein**, Associate Professor, Virginia Tech.  
**Henry Hollander**, Coordinator for Outreach and Alumni Relations, Virginia Tech Washington-Alexandria Architectural Center  
**Tom Ilich**, Retired, Turner Construction Company  
**Christian E. Jahrling**, Vice President and General Manager, Federal Services  
**Steven Reynolds**, CAD Manager, Davis Carter Scott LTD  
**Brian J. Vella**, Attorney, Smith Pachter

## Automotive Technology

### Alexandria Campus

**Scott Freeman**, Automotive Instructor, Faquier High School  
**Jeff Gould**, Managing Partner, Main Street Shell  
**Novis Pearson**, Senior Lead Technician, Koons Ford  
**Phillip Winston**, Territory Manager, Standard Motor Products, Inc.

### Manassas Campus

**Raphael Alfred**, Director, Technology and Business Operator  
**George Apperson**, Compliance Officer, VA DEQ  
**Gene Brown, II**, Shop Foreman, Stringer's Exxon  
**Matthew Cooper**, Retail Technician Manager, CarMax  
**Robert Crook**, Service Manager, Miller Toyota  
**Jay Emery**, District and Services Manager, American Honda Motors  
**Harry Houckes**, SE Regional Representative, National Business Aviation Association  
**Kenneth Shepherd**, General Manager, Miller Toyota  
**Michael Wang**, Service Director, Chrysler Dodge Jeep Ram  
**Thomas Westergaard**, Fleet Management Division Chief, Prince William County Department of Public Works

## Biotechnology

**Steve Hargan**, Business Development Manager, Loudoun Department of Economic Development  
**Sara Hooshangi**, Director and Assistant Professor, George Washington University  
**Pamela Jarman**, Lab Manager, The Bode Tech Group  
**Jason Jens**, Development Supervisor and Senior Associate Scientist, Mediatech, Inc.  
**Jeffrey A. Kaczmarek**, Executive Director, Prince William County Dept. of Economic Development  
**Dr. Vladimir Karginov**, Chief Scientific Officer, Innovative Biologics, Inc.  
**Dr. Richard Lewis**, CEO, Access Bio  
**Dr. Ed Otto**, Assistant Director, Undergraduate Biology Program, George Mason University  
**Leslie Platt**, Counsel, Pillsbury, Winthrop, Shaw and Pittman  
**Crystal Sullivan**, Lab Coordinator, Janelia Farm Research Campus, Howard Hughes Medical Institute  
**Erin Sweeney**, Director, Human Identification and Databasing, Bode Cellmark Forensics  
**Amy VanMeter**, Director, Aspiring Scientists, Summer Intern Program, George Mason University  
**George Wolfe**, Director, LCPS Academy of Science, Loudoun County Public Schools

## Business Management

**Dr. Sultan Chaudhry**, CEO, Adams Smile and Grove Dental  
**Kristin D'Amore**, President, NVCTC  
**Taylor Devine**, Founder, The CDI Group  
**Marc Engelking**, Owner/operator, Firehouse Subs  
**Eric L. Gentsch**, Program Director, Logistics Management Institute

## Construction Management Technology

This committee is being restructured.

## Contract Management

**James John Jasinski**, Vice President Federal Business Opportunities, Fortinet, Inc.  
**John Krieger**, Professor, Contract Management, Executive Department, Defense Systems Management College  
**Michael Wooten**, Special Assistant to the President, Defense Acquisition University

## Cybersecurity

**William Butler**, Director, Critical Infrastructures and Cyberprotection Center, Capital Technical University  
**Hollis Cash**, VP and Chief Technology Officer, Huntington Ingalls Industries  
**Brigitte Custer**, Cyber Practice, Lead Intelligence Solutions Division, GDIT  
**Brian DeMuth**, Director, Cybersecurity Program Operations, ManTech  
**Carlo Espiritu**, Subject Matter Expert, FFX Information Security Office  
**Lisa Foreman**, Senior Information Assurance Consultant, ATO Consulting  
**Renee Forney**, Director, Cyberskills Management Support Initiative, DHS  
**Christopher Magaha**, Security Education Academic Liaison, National Security Agency  
**Manuel Villar**, Director Cyber Operations, Raytheon Foreground Security

## Diesel Mechanics Technology

**Randy Smith**, Equipment Maintenance Manager (retired), Prince George's County, Maryland  
**William Stevens, Jr.**, Transportation Fleet Supervisor, Washington Gas Light Company

## Early Childhood Development

**Wyne Busman**, Executive Director, Infant Toddler Family Day care  
**Elisabeth Closter**, Director of School Readiness Programs, Fairfax County Office for Children  
**Silke Duke**, Executive Director, Imagination Learning Center  
**Lisa Farinholt-O'Brien**, Workforce Development Director/LCSW, Infant and Toddler Family Day Care  
**Pamela W. Garner**, Professor Childhood Studies, George Mason University  
**Anne Goldstein**, Director of School Age Child Care Programs, Fairfax County Office for Children  
**Rosemary Kendall**, Ph.D., Parent Educator, Program Specialist, Fairfax County Public Schools  
**Kendra Kielbasa**, Executive Director, Smart Beginnings Great Prince William  
**Tammy Mann**, President/CEO, Campagna Center  
**Jennifer Merrill**, Success Advisor, Northern Virginia Community College  
**Morris L. Redd**, Director, Early Childhood Learning Institute, Hopkins House  
**Jill Sobon**, Program Manager, Early Childhood, Fairfax County Public Schools  
**Debora S. Stepien**, VDOE Training and Technical Assistance, George Mason University

## Engineering Technology

**Bernie Brien**, Aerospace Engineer, Aerojet  
**Jeffrey Fernandez**, Ph.D., PE, Managing Consultant, JF Associates, Inc.  
**Leslie F. Keelty**, CEO, Founder, LEAD Consult, LLC  
**Peter Leitner**, Professor, National Intelligence University  
**Bryan Neuhaus**, Senior Consultant, LMI  
**Anitha Raj**, President, ARAR Technology  
**Neal Schmeidlea**, President, OMNI Engineering  
**Will Vehrs**, Virginia Department of Business Assistance

## Fire Science Technology

This committee is being restructured.

## Fitness

This committee is being restructured.

## Geographic Information Systems

**David Attaway**, Solution Engineer, ESRI  
**Christopher Garrity**, Supervisory Geographic Information Sciences, U.S. Geological Survey  
**Michael Liddle**, GIS Customer Services Supervisor, GIS Emergency Operations Manager and National Capital Region Geospatial Data Exchange Program Manager, Fairfax County

**Darren Stelle**, Account Manager/Sale, BAE Systems  
GXP Group

**Lawrence Stipek**, Director, Office of Mapping and  
Geographic Information for Loudoun County, VA  
Loudoun County

**Michael Wagner**, GIS Lead Teacher, Loudoun County  
Public Schools

## Graphic Design

### Alexandria Campus

**Karin Huggens**, Illustrator, Animator, Graphic Designer

**Emine Kramer**, Adjunct Faculty, Northern Virginia  
Community College

**Zenon Slawinski**, Owner, Zenarts Design Studio

**Eddie Sutton**, Principal, JustPixels.com

### Loudoun Campus

**Susan Armstrong**, Graphic Design Specialist, American  
Institutes for Research

**Steven Fleshman**, Creative Director, DR2 LLC

**Matt Jeffers**, Communication Design graduate

**Elena Mussari-Fugate**, Adjunct Instructor, Northern  
Virginia Community College

**Maryam Rostamian**, Instructional Design NOVA

**Katherine Sullivan-Miller**, Graphics Designer Owner,  
Kathy Sullivan Graphics, LLC

**Leslie Tharp**, Team Lead/Graphic Designer/Video  
Editor, Scitor Corporation

## Horticulture Technology

**Terri Aufmuth**, Landscape Designer, Cornerstone  
Landscaping

**Deborah Chaves**, Instructor/Environmental Plant  
Science/Biotech, Monroe Technology Center

**Kristen Conrad Buhls**, Extension Agent ANR, Virginia  
Cooperative Extension Service

**Peter Deahl**, Consulting Arborist, Fine Pruning

**Richard Knapp**, Vice President, Country Springs  
Gardens

**Beth Sastre**, Commercial Horticulturist, VCE–Loudon  
Extension Office

**Jeff Minnich**, Owner, Garden Design, Inc

**Keith Tomlinson**, Manager, Meadowlark  
Botanical Gardens

## Hospitality Management

**Michael Garcia**, Operating Partner, Fleming's  
Restaurant Group

**Dr. Mahmood Khan**, Department Head, Virginia Tech  
Northern Virginia Center

**Ruth Kailani O'Rouke**, Program Director, University of  
Maryland Eastern Shore at Shady Grove

**Robert Tate**, Market Director of Human Resource,  
Crystal Gateway Marriott

**Jim Wordsworth**, President, J.R.'s Good Times, Inc.

## Information Systems Technology

**Sridhar Amudhanar**, President, Maxys Corp.

**Christopher Barnett**, Chief Security Architect,  
General Dynamics

**Adam Benware**, Senior Training Consultant, U.S. House  
of Representatives

**Thomas Edwards**, Vice President for Regional Sales,  
FEITH Industry

**Donal Hogan**, Management Analyst, PMO

**Srinivasa Kasturi**, Information Security Life Cycle  
Specialist, Banyan Logic

**Matthew Monte**, Vice President of Software Company,  
McCubed Solutions

**Anna Noteboom**, Chief Information Assurance Architect-  
Federal Sector, Avaya, Inc.

**Ingrid Peterson**, Senior Financial Analyst/Advanced  
Communication Engineer, Electronic Data Systems  
Corporation

**Satyam Priyadarshy**, Ph.D., President, DC Chapter of TIE

**Michael Rudinsky**, Director of Corporate Training, Iron  
Yard

**Keith Shoates**, Director, Enterprise Information  
Technology, Integrity Applications Inc.

**Ajoy Singh**, Director, Technology Services, WorkForce  
Technologies

## Interior Design

This committee is being restructured.

## Marketing/Digital Media

**Jacqui Barrineau**, Editor, Mobile-Social Team,  
USA Today

**Debbie Capp**, Director of Advertising, Merrifield  
Garden Center

**Jessica Clark**, Vice President, Marketing and Customer  
Operations, Care Free Boats

**Jose Luis Cortes**, Cloud Retention Manager – Latin  
America, SAP

**Larry Edwards**, CEO, The LDE Group, Inc.

**Dixie Eng**, General Manager, Old Towne Pet Resort

**Luisa Gaviria**, Business Development/Marketing,  
The Boeing Co.

**James Hostetler**, eCommerce Product Manager,  
Capitol One

**Joan Smith Sahlgren**, Senior Marketing Consultant

**Robert Sowell, Sr.**, Vice President of Community  
Relations, Apple Federal Credit Union

**Dr. Pamela Stoessell**, Professor of Fashion Design and  
Merchandising, Marymount University

**Matt Warnock**, Director of Communication, Marketing,  
and Digital Media, International Council of Air Shows

## Paralegal Studies

**Kelly Marie Ackert**, Paralegal, Buonassisi, Henning & Lash, P.C.  
**Jean Galloway Ball**, Attorney, Hale Ball Carlson Baumgartner Murphy, PLC  
**Candice Benvenuti**, Educator, Fairfax County Public Schools  
**Emmitt Carlton**, Special Counsel, Office of Intergovernmental Affairs  
**Jennifer Carroll-Foy**, Adjunct NOVA  
**Monica Corry**, Paralegal Specialist, US Postal Service  
**Karen Dunkley**, Attorney, Law office of Karen Dunkley  
**Kelly Hebron**, Faculty, NOVA  
**Kristine A. Heefner**, Paralegal, Odin, Feldman and Pittleman, PC  
**Maureen Meyer**, Adjunct Faculty, Northern Virginia Community College  
**Angela Gaddis Moore**, Attorney, Moore Law, PLC  
**Maria Esther Smith**, Senior Legal Analyst, Freddie Mac  
**Marie-Christine Webster**, Legal Assistant/Paralegal, Blankingship & Keith, PC  
**Cassi Wickline**, Paralegal Studies, Advisory Board, Woehrle, Franklin, Dahlberg, Jones  
**Loretta Morris Williams**, Attorney, Hale Ball Carlson Baumgartner Murphy, PLC

## Photography and Media

**Iwan Bagus**, Assistant Professor, University of the District of Columbia  
**Leena Jayaswal**, Photography Professor, American University  
**Hannele Lahti**, Freelance Photographer and Owner, Hannele Lahit Photography  
**Erika Liaison**, Rental Liaison, Penn Camera  
**William McKenna**, Producer, BBC World News America  
**Susana Raab**, Freelance Documentary Photographer, Washington, D.C.  
**Aziz Yardani**, Associate, The Leica Store

## Professional Writing

**Phyllis O. Bresler**, President & CEO, PW Communications, Inc  
**Douglas Eyman**, Director, PhD In Writing and Rhetoric, Professional Writing Graduate and Undergraduate, Mason  
**Leslie Lass**, Assistant Professor, English, Northern Virginia Community College  
**Dac Nelson**, Adjunct Professor, NOVA  
**Deidre Williamson**, Proposal Development Manager, CACI Inc

## Public History and Historic Preservation

**Amy Bertsch**, Public History and Historic Preservation Graduate  
**David Clark**, Executive Director, Loudon Archaeological Foundation  
**Phyllis Cook-Taylor**, Exception Research Specialist, Online Resources  
**Stanley Contrades**, Current Public and Historic Preservation Student  
**Richard Gillespie**, Director, Mosby Heritage Area Association  
**Tracy Gillspie**, Historic Site Manager, Northern Virginia Parks  
**Michael Henry**, Site Administrator, Fairfax County Park Authority  
**Cynthia Liccese-Torres**, Historic Preservation Program Coordinator, Arlington County Government  
**Robert Orrison**, Historic Site Operations Supervisor, Prince William County Historic Preservation Division  
**Constance Ramirez**, Program Director, Federal Preservation Institute  
**Jana Shafaogi**, Director of Preservation, Morven Park  
**Julia Silver**, Museum Assistant, National Institute of Standards and Technology  
**John Sprinkle**, Chair, City of Alexandria Historical Restoration and Preservation Commission

## Recreation, Parks, and Leisure Studies

**Ryan Brookes**, Recreation Specialist II, McLean Community Center  
**Mike Cadwallader**, Manager, Audrey Moore Recreation Center  
**Jay Ellington**, Adjunct, George Mason University  
**Christopher Goldbecker**, Assistant Operations Manager, Audrey Moore Recreation Center  
**Susan M. Hansen**, Chief of Interpretation and Education, National Park Service

## Substance Abuse

**Barbara G. Fornoff**, Employee Assistance, Inova Hospital  
**Maria A. Hylton**, Clinical Social Worker, Phillip I. Haber, LPC Associates in Counseling  
**Renee Bobbie Jaeger**, Employee Assistance, Arlington EAP  
**Dr. Holly C. Matto**, Associate Professor, George Mason University  
**Chandell Bey Miller**, Addiction Counselor, Harrison House of Virginia  
**Joan Normandy-Dolberg**, Director, Family Counseling of Springfield  
**Deanna Pruitt**, Clinical Research Assistant, Defense and Veterans Brain Injury Center  
**Michael Ricker**, Adjunct Faculty, Fairfax County Mental Health Emergency Services



## Veterinary Technology

**Samantha-Jo Ashley Ebert**, RVT, ALAT, Laboratory Animal Technician, SoBran Inc

**Susan M. Barnes**, Medical Director, VCA AECC, LVIM, VRA, VCA Animal Emergency Critical Care & Veterinary Radiology

**Dr. Robert Brown**, DVM, Cherrydale Veterinary Clinic

**Ellen M. Carozza**, Licensed Veterinary Technician, NOVA CAT Clinic

**Azadeh Chegini**, LVT, Key Business Manager, Zoetis Animal Health

**Amanda Compton**, LVT, RVT, Eq.D., Owner, Amanda Campton Veterinary

**Dana Eddy**, LVT, CVPM, Hospital Administrator, Animal Medical Center of Cascades

**Gail Figgins**, LVT, Marion DuPont Scott Equine Medical Center

**Kimberly Hill**, LVT, Patient Care Manager, Artemis Veterinary Emergency and Specialty Services

**Gary Hornbaker**, LVT, Resource Coordinator, Farmer and Rural County

**Marta Ishmael**, LVT, Virginia Board of Health Professionals

**Jay Joyce**, President, Owner, Senior Veterinary Associate, Total Equine Veterinary Associates, PC

**Donna Krochak**, Professional Services Veterinarian, Boehringer Ingelheim

**Kelly Lucas**, Corporate Trainer, SoBran, INC

**Dr. Thomas Massie**, DVM, Owner, Rose Hill Veterinary Practice, P.C.

**Jane Naramore**, LVT, Rose Hill Veterinary Practice

**Katie Newbold**, CEO, CVCA-Cardiac Care for Pets

**Dr. Jeffery Newman**, DVM, owner, Caring Hands Animal Hospital

**Josh M. Parkins**, Territory Manager, Elanco Animal Health

## Welding

This committee is being restructured.

## Health Professions Advisory Committees

### Dental Hygiene

**Lisa Baehr**, Dental Office Manager, John Sellers Dental Office

**Wendy Hicks**, Dental Assistant, Drs. Young and Ayati, Family Dentistry

**Jeannette Jimenez**, Office Manager, Harold A. Fleming, DDS, MS, PC

**Dima Lakkis**, DDS, MS, Periodontics

**Jong Hoon Lee**, Registered Dental Hygienist, Contemporary Dentistry of Virginia

**Rhea N. Rossi**, Registered Dental Hygienist, Burke Dental Center

**Dr. John Sellers Jr.**, General Dentist, Fairfax Dental Care

**Sheila Sheats**, Clinical Hygienist, Bruce Markoff, DDS

**Laurie Sizemore**, Practice Administrative/Office Manager, Self-Employed Consultant

## Diagnostic Medical Sonography

**Sally Classick**, Ultrasound Manager/Clinical Instructor Inova Fairfax Hospital

**Randy Damron**, Director, Medical Imaging

**Candice Davis**, Graduate Student

**Gihan Elshakweer**, Team Leader Sonographer, Sentara No. Va. Medical Center

**Judith Green**, Clinical Application Specialist, XRAY visions

**Suzette Kern**, Public Member, Retired

**David Lakhman**, Regional Manager, Center for Vein Restoration, Center for Vein Restoration

**Tammy Lamb, MD**, Radiologist, Sentara Northern Virginia Medical Systems

**Nancy-Jo Manney**, Public Member, Greater Springfield Chamber of Commerce

**Danielle Matassa**, Clinical Instructor, Inova Fair Oaks Hospital

**Rebecca Miller**, Sonography Student, Northern Virginia Community College

**Amanda Montgomery**, Clinical Director of Radiology, AAR

**Linda Zanin**, Program Director, Montgomery College

## Emergency Medical Services Technology

**Graig Evans**, Executive Director, No. Va. EMS Council

**Mathew Fox**, Fire Rescue Lieutenant, City of Manassas Fire and Rescue

**Briam Hricik**, EMS Battalion Chief/EMS Operations Manager, City of Alexandria Fire Department

**Jose Salazar**, Deputy Chief, EMS and Training, Loudoun County Department of Fire, Rescue, and Emergency Management

**Bethany Pantuck Shively**, Communication Specialist, American Seed Trade Association

**Edward Stern**, Trauma Nurse Specialist, INOVA Fairfax Hospital

**Margaret Zollman**, RN Clinical Preceptor, INOVA Health Systems

## Health Information Management

**Marion Adineh**, Director, HIMS, Kaiser Permanente

**Sharon Boggio**, RHIA, Administrative Director, HIM, Bon Secours St. Mary's Hospital

**Richard Brown**, Director, Medical Records, INOVA Mount Vernon Hospital

**Mona Calhoun**, Chair, HIM Program, Coppin State University

**Patricia Campola**, Operations Manager, Mary Washington Healthcare



**Zinethia Clemons**, Senior Health Privacy Specialist, DHHS, Office of Civil Rights

**Sheila Coverson**, HIM Director/FOIA/Privacy Office

**Victor Eilenfield**, President/CEO, HVAdvance, Inc.

**Beverly Foreman**, Director, Healthy Information Services, Sentara Potomac Hospital

**Terri McCray**, Director, HIM/Privacy Officer, Virginia Hospital Center

**Sandra Shiflet**, Health Information Manager, Capital Caring

**Peggy L. Taylor**, MSN, RN, Vice President, Operations, LightHouse Healthcare, Inc.

**Allison Viola**, VP Policy and Government Affairs, eHealth Initiative

## Medical Laboratory Technology

**Susan Barbieri**, Medical Laboratory Technician, Sentara Hospital

**Lorraine Doucette**, MT (ASCP), CLS (NCA), Medical Laboratory Program Coordinator, Anne Arundel Community College

**Maureen Friedheim**, MT (ASCP), Retired, Lab Operations Manager, Kaiser Permanente, Community Representative

**Marcia Firmani**, Director, GW MLS Program, George Washington University

**Mary Lacomber**, Inova Mt. Vernon Hospital, POC and Quality Assurance Coordinator

**Teresa Nadder**, Ph.D., Chair, Clinical Laboratory Sciences Program, Virginia Commonwealth University

**Sue Pandish**, Senior Manager, Laboratory Operations, Quest Diagnostics

**Erinn Theado**, Education Coordinator, Mary Washington Healthcare

**Marybeth Waldeck**, MT (ASCP), Laboratory Administrator, The Fauquier Hospital, Inc.

## Nursing

**Geraldine Boltich-Hofler**, Special Assistant to the President, Program Manager, NOVA HealthForce

**Tammy Dean**, Director, PWCS of Practical Nursing

**Maureen DeSena**, Academic Clinical and Policy Coordinator, INOVA Health Systems

**Capt. Stacia Fridley**, Senior Nurse Executive, Naval Health Clinic Quantico

**Sibyl Goodwin**, RN, Director of Nursing-Assisted Living Facility, Birmingham Green

**Christina Grabus**, CNO, Novant Health System

**Kathy Howey**, MSN, RN, Clinical Nurse Educator, Reston Hospital Center

**Hyunjong (Lisa) Kim**, RN, Assistant Director of Nursing, Heatherwood Retirement Community

**Valerie Keane**, Vice President and CNO, Sentara Northern Virginia Medical Center

**Ann Marie Nayback-Beebe**, Ph.D., FNP-BC, Director of Education, Training and Research, Fort Belvoir Community Hospital

**Deanna Roca**, Clinical Manager, Children's National Specialists of Virginia

**Dr. Carol Urban**, Ph.D, MSN, RN, Assistant Dean of Nursing, George Mason University

**Sr. Randall Wilson**, Associate Research Director, Jobs for the Future

## Occupational Therapy Assistant

**Staci Argade**, Certified Occupational Therapy Assistant, Helping Hands

**Loreto Claustro**, Certified Occupational Therapy Assistant, Burke Health and Rehabilitation Center

**Erin Clements**, Occupational Therapist, Pediatric Achievements, LLC

**William C. Cockerill**, Certified Occupational Therapy Assistant, Independence Therapy Services

**Michael Guzman Diaz**, Corporate Compliance Officer, Flagship Rehabilitation

**Kelly Hanik**, MOTR/L, CBIS, Occupational Therapist, INOVA Mount Vernon Hospital

**Sharon H. Harris**, Occupational Therapist, Fort Belvoir Community Hospital

**Susan Nixon**, MS, OTR/L, Fieldwork Education Coordinator, Fairfax County Public Schools

**Mary Anne Rickabaugh**, OTR/L, Director WMC Acute Care PT/OT/SLP Services, Winchester Medical Center

**Aby Sedwick**, Clinical Specialist, OT, Inova Mount Vernon Hospital

**Marbea Tiernan Tamaro**, Assistive Technology Specialist, Arlington Public Schools

**La Van-Buendia**, Occupational Therapist, Medstar Washington Hospital Center

## Physical Therapist Assistant

**David Emerick**, Physical Therapy Assistant, Fauquier Home Health

**Margaret Guarino**, Physical Therapy, Clinic Director, INOVA Rehabilitation Center

**Misty Jerkins**, Physical Therapy Assistant, Virginia Hospital Center

**Robyn L. O'Connor**, Owner, Integrated Sports Medicine and Physical Therapy

**Srilekha Reddy Palle**, Rehabilitation Director, INOVA Alexandria Hospital

**Cathleen Renkiewicz**, Physical Therapy, Director of Rehabilitation, The Virginian

**Hamid Saeed**, Physical Therapist Assistant, Burke Health and Rehab Center

**Sara Schmidt**, Physical Therapy Assistant, ACAC Physical Therapy

**Paula Smith**, Assistant Professor, University of Vermont DPT Program

**Michele Wiley**, Supervisor of Special Education,  
Loudoun County Public Schools

**Danielle Young**, Physical Therapist, Ashburn Elementary-  
Loudoun County Public Schools

## Radiography

**Deborah Berg**, Radiology Manager, INOVA Healthplex

**Randy Damron**, Director of Radiology, INOVA Mount  
Vernon Hospital

**James Finizio**, Radiology Manager, Radiology  
Imaging Associates

**George Gifford**, Radiologic Tech/Clinical Instructor,  
INOVA Alexandria Hospital

**Nicholas Gimmi**, Clinical Operations Manager, INOVA  
Mount Vernon Hospital Lorton Complex

**Precinda Nicely-Jallow**, Clinical Coordinator, Virginia  
Hospital Center

**Angela Pierce**, Radiologic Technologist/Clinical  
Instructor, Kaiser Permanente

**Estela Prieto**, Retired Director of Radiology

**Yanileht Ramos**, Radiologic Technologist, INOVA  
Alexandria Hospital

**Thomas Redman**, Senior Director of Imaging Services,  
INOVA Fairfax Hospital

**Thomas Schrack**, Manager, MR Fairfax Radiology  
Consultants

## Respiratory Therapy

**Shane Blake**, MA, RRT-NPS, Acting Director, Respiratory  
Care, INOVA Fairfax Hospital

**James Lamberti**, MD, Medical Director, Northern Virginia  
Pulmonary and Critical Care Associates

**Mauro A. Salas**, Education Coordinator, Children's  
Hospital National Medical Center

## Curriculum Codes

Select your major field of study from the following list. Place the curriculum code of your choice on the Application for Admission form. Please make sure that your selected program is offered at a campus you can attend.

<b>Codes Associate of Arts:</b>	9090 Automotive Technology	<b>Codes</b>	<b>Career Studies Certificate:</b>
5290 Fine Arts	9091 Automotive Technology/Emissions	221-203-02	Accounting
6480 Liberal Arts	1490 Biotechnology	221-640-01	American Sign Language
6489 Liberal Arts/Art History	2120 Business Management	221-299-06	Application Programming*
6482 Liberal Arts/Communication Studies	5110 Graphic Design	221-909-01	Automotive Maintenance and Light Repair
6484 Liberal Arts/English Specialization	5113 Graphic Design/Interactive Design	221-149-01	Biotechnology Lab Technician
6486 Liberal Arts/International Studies	9170 Construction Management Technology	221-212-15	Business Information Technology*
648B Liberal Arts/Psychology	2480 Contract Management	221-909-10	Collision Repair Technology
5550 Music	3450 Cybersecurity	221-729-01	Computer Aided Drafting and Design*
	6360 Early Childhood Development	221-917-01	Construction Supervision
<b>Associate of Science:</b>	9680 Engineering Technology	221-732-09	Cybersecurity
2130 Business Administration	9684 Engineering Technology/Data Center Operations	221-299-11	Database Specialist*
2460 Computer Science	4270 Fire Science Technology	221-920-02	Diesel Mechanics Technology*
4071 Criminology and Criminal Justice	3350 Horticulture Technology	221-882-01	Driver Education Instructor*
8310 Engineering	3353 Horticulture Technology/Landscape Design	221-636-04	Early Childhood Development
6990 General Studies	7750 Hospitality Management	221-212-10	Entrepreneurship
6993 General Studies/ Recreation, Parks and Leisure Studies	7751 Hospitality Management/Food Service Management	221-405-45	Forensic Investigation (Advanced)
3400 Information Technology	2990 Information Systems Technology	221-405-43	Forensic Investigation (General)
8800 Science	2295 Information Systems Technology/Cloud Computing	221-719-71	Geographic Information Systems (GIS)*
8802 Science/Mathematics	5200 Interior Design	221-190-01	Health Science*
8820 Social Sciences	2510 Marketing	221-903-10	HVAC-R and Facilities Services Technology
8823 Social Sciences/Deaf Studies	2600 Paralegal Studies	221-636-06	Infant and Toddler Care
8825 Social Sciences/Geospatial	5020 Photography and Media	221-299-09	IT Technical Support*
8824 Social Sciences/Political Science		221-915-01	Site Development
8821 Social Sciences/Psychology	<b>Codes Associate of Fine Arts</b>	221-212-13	Leadership Development
8822 Social Sciences/Teacher Education	5630 Associate of Fine Arts: Cinema	221-251-02	Marketing
		221-179-01	Massage Therapy
<b>Associate of Fine Arts:</b>		221-407-95	National Security
5630 Cinema	<b>Certificate:</b>	221-732-01	Network Administration*
5610 Visual Art	4060 Administration of Justice	221-732-04	Network Engineering (Specialist)*
	9030 Air Conditioning and Refrigeration	221-460-01	Personal Training
<b>Associate of Applied Arts:</b>	9300 Architectural Drafting	221-251-03	Promotion and Public Relations
5300 Fine Arts	2040 Bookkeeping	221-648-03	Public History and Historic Preservation
5301 Fine Arts/Photography	2500 Contract Management		Retail Management
5590 Music	2450 Culinary Arts	221-251-04	Security Management
5591 Music/Jazz/Popular Music	6320 Early Childhood Development	221-251-01	Social Media
	6950 General Education*	221-529-02	Theatre*
<b>Associate of Applied Science:</b>	2670 Meeting, Event and Exhibition Management	221-352-03	Web Design and Development
2030 Accounting	2970 Multimedia Design	221-352-02	Web Design Specialist
4000 Administration of Justice	5570 Music Recording Technology	221-995-01	Welding/Basic Techniques
4001 Administration of Justice/Homeland Security	2650 Professional Writing		
9040 Air Conditioning and Refrigeration	4030 Substance Abuse Rehabilitation Counselor		
6400 American Sign Language to English Interpretation			
9010 Architecture Technology			

**Allied Health, Nursing and Vet Tech Majors:** These are "restricted plans" and require a separate admission process. For initial admission to the College, select General Studies (6990) as the Plan/Major. From the list below, select the code for the health-related plan you are interested in and enter it as a sub-plan on the Application for Admission.

<b>Codes Associate of Applied Science:</b>	1810 Respiratory Therapy	<b>Codes</b>	<b>Career Studies Certificate:</b>
1180 Dental Hygiene	1880 Veterinary Technology	221-152-01	Clinical Data Coding
1090 Diagnostic Medical Sonography		221-146-01	Emergency Medical Technician (Basic)*
1460 Emergency Medical Services*	<b>Codes Certificate:</b>	221-146-03	Emergency Medical Technician (Intermediate)
1520 Health Information Management	1200 Dental Assisting*	221-152-02	Health Information Technology*
1510 Medical Laboratory Technology		221-151-10	Medical Laboratory Assistant
1560 Nursing		221-146-05	Paramedic
1260 Occupational Therapy Assistant		221-151-02	Phlebotomy*
1800 Physical Therapist Assistant			
1720 Radiography			

\*Program is not eligible for financial aid.

# Northern Virginia Community College

## PROGRAMS OF STUDY

	Alexandria	Annandale	Loudoun	Manassas	Medical Education	NOVA Online	Woodbridge
Accounting	AAS, CSC	AAS, CSC	AAS, CSC	AAS, CSC		AAS, CSC	AAS, CSC
Bookkeeping	C	C	C	C		C	C
Administration of Justice		AAS, C		AAS, C		AAS, C	AAS, C
Forensic Investigation, General		CSC		CSC			CSC
Forensic Investigation, Advanced		CSC		CSC			CSC
Homeland Security Specialization		AAS		AAS			AAS
National Security		CSC		CSC			CSC
Security Management		CSC		CSC			CSC
Air Conditioning and Refrigeration							AAS, C
HVAC-R and Facilities Services Technology							CSC
American Sign Language to English Interpretation		AAS					
American Sign Language		CSC					
Architectural Drafting	C	C					
Architecture Technology	AAS	AAS					
Automotive Maintenance and Light Repair	CSC			CSC			
Automotive Technology	AAS			AAS			
Collision Repair Technology	CSC						
Diesel Mechanics Technology				CSC			
Emissions Specialization	AAS			AAS			
Biotechnology			AAS	AAS			
Biotechnology Lab Technician			CSC	CSC			
Business Administration	AS	AS	AS	AS		AS	AS
Business Management	AAS	AAS	AAS	AAS		AAS	AAS
Business Information Technology	CSC	CSC	CSC	CSC		CSC	CSC
Entrepreneurship	CSC						
Leadership Development	CSC	CSC	CSC	CSC		CSC	CSC
Computer Science	AS	AS	AS	AS			AS
Construction Management Technology	AAS						
Construction Supervision	CSC						
Contract Management							AAS, C
Cybersecurity	AAS, CSC	AAS	AAS	AAS, CSC		CSC	AAS, CSC
Dental Hygiene					AAS		
Dental Assisting					C		
Diagnostic Medical Sonography					AAS		
Driver Education Instructor					CSC		
Early Childhood Development	AAS, C, CSC		AAS, C, CSC	AAS, C, CSC		C, CSC	
Infant and Toddler Care	CSC		CSC	CSC		CSC	
Emergency Medical Services					AAS		
Emergency Medical Technician—Basic					CSC		
Emergency Medical Technician—Intermediate					CSC		
Paramedic					CSC		
Engineering	AS	AS	AS	AS			
Engineering Technology	AAS	AAS					
Computer Aided Drafting and Design	CSC	CSC					
Data Center Operations Specialization		AAS		AAS			
Site Development	CSC						
Fire Science Technology					AAS	AAS	
General Education	C	C	C	C		C	C
General Studies	AS	AS	AS	AS		AS	AS
Recreation, Parks and Leisure Studies Specialization		AS					
Geographic Information Systems			CSC				
Graphic Design	AAS		AAS				
Interactive Design Specialization	AAS		AAS				
Multimedia Design	C		C				
Web Design Specialist	CSC		CSC				
Health Information Management					AAS		
Clinical Data Coding					CSC		
Health Information Technology					CSC		
Health Science	CSC	CSC	CSC	CSC	CSC	CSC	CSC
Horticulture Technology			AAS				
Landscape Design Specialization			AAS				

AA - Associate of Arts    AS - Associate of Science    AAA - Associate of Applied Arts    AFA - Associate of Fine Arts    AAS - Associate of Applied Science  
 C - Certificate    CSC - Career Studies Certificate

# Northern Virginia Community College

## PROGRAMS OF STUDY

	Alexandria	Annandale	Loudoun	Manassas	Medical Education	NOVA Online	Woodbridge
Hospitality Management		AAS					
Culinary Arts		C					
Meeting, Event and Exhibition Management		C					
Information Systems Technology	AAS	AAS	AAS	AAS		AAS	AAS
Application Programming			CSC			CSC	
Cloud Computing		AAS	AAS				AAS
Database Specialist				CSC			
IT Technical Support							CSC
Network Administration		CSC	CSC			CSC	
Network Engineering (Specialist)	CSC	CSC		CSC		CSC	CSC
Web Design and Development	CSC			CSC		CSC	CSC
Information Technology	AS	AS	AS	AS		AS	AS
Interior Design			AAS				
Liberal Arts	AA	AA	AA	AA		AA	AA
Art History Specialization	AA	AA	AA	AA			AA
Communication Studies Specialization	AA	AA	AA	AA		AA	AA
English Specialization	AA	AA	AA	AA			AA
International Studies Specialization	AA	AA	AA	AA		AA	AA
Theatre	CSC	CSC	CSC	CSC			CSC
Marketing		AAS, CSC					
Promotion and Public Relations		CSC				CSC	
Retail Management		CSC					
Social Media		CSC				CSC	
Massage Therapy							CSC
Medical Laboratory Technology					AAS		
Medical Laboratory Assistant					CSC		
Phlebotomy					CSC		
Music	AAA, AA	AAA, AA	AAA, AA				
Jazz/Popular Music Specialization	AAA	AAA	AAA				
Music Recording Technology			C				
Nursing					AAS		
Occupational Therapy Assistant					AAS		
Paralegal Studies	AAS						
Personal Training	CSC	CSC	CSC	CSC			CSC
Photography and Media	AAS						
Physical Therapist Assistant					AAS		
Professional Writing	C	C	C	C			C
Public History and Historic Preservation			CSC				
Radiography					AAS		
Respiratory Therapy					AAS		
Science	AS	AS	AS	AS		AS	AS
Mathematics Specialization	AS	AS	AS	AS		AS	AS
Social Sciences	AS	AS	AS	AS		AS	AS
Deaf Studies Specialization		AS					
Geospatial Specialization			AS				
Political Science Specialization	AS		AS				
Psychology Specialization	AS	AS	AS	AS			AS
Teacher Education Specialization	AS	AS	AS	AS		AS	AS
Substance Abuse Rehabilitation Counselor	C						
Veterinary Technology			AAS				
Visual Art	AFA	AFA	AFA	AFA	AFA		AFA
Welding: Basic Techniques				CSC			

AA - Associate of Arts    AS - Associate of Science    AAA - Associate of Applied Arts    AFA - Associate of Fine Arts    AAS - Associate of Applied Science  
 C - Certificate    CSC - Career Studies Certificate

