

2010–2011

CATALOG

NOVA | Northern Virginia
Community College

An Equal Employment Opportunity/Affirmative Action Institution

It is the policy of both Northern Virginia Community College (NOVA) and the Virginia Community College System (VCCS) to maintain and promote equal employment and educational opportunities without regard to race, color, sex or age (except where sex or age is a bona fide occupational qualification), religion, disability, national origin, marital status, veteran status, political affiliation, sexual orientation, or other non-merit factors. Inquiries concerning affirmative action and equal opportunity policies should be addressed to the College's director of Affirmative Action/Minority and Legal Affairs, whose office is located in the Brault Building at the Annandale Campus (703-323-3266).

Policy Regarding Online and Print Versions of the Catalog

Every effort has been made to provide the most accurate, up-to-date information possible in the printed catalog. It is revised each year, but 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 Web site at www.nvcc.edu where there is a link between the online *College Catalog* and a document titled "Updates to the *Catalog*." Students should consult the NOVA online *College Catalog* periodically for updates and are encouraged to consult with their academic advisors regularly. The statements and provisions in this catalog are not to be regarded as a contract between the student and the College that cannot be recalled. The College reserves the right to change, when warranted, any of its policies, programs, courses and fees.

ADMINISTRATION

PRESIDENT OF THE COLLEGE

Robert G. Templin, Jr.

ADMINISTRATIVE COUNCIL

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State Board Liaison: R. Michael Mohler

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Secretary to the State Board

STATE BOARD FOR COMMUNITY COLLEGES

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William H. Talley, III

Alan G. Toxopeus

Northern Virginia Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools 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 at 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. 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:

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

National Accrediting Agency for Clinical Laboratory Sciences

National League for Nursing Accrediting Commission

FALL SEMESTER 2010

***Please check NOVAConnect for the start dates and census dates of Dynamic Sessions**

Advising Week for Fall SemesterApril 5–9
 NOVAConnect Web/Telephone
 Priority Enrollment for Continuing
 Students for All Sessions April 13 – May 3
 Priority Date for Fall Financial Aid
 Applications for all students May 1
 NOVAConnect Web/Telephone
 Open Enrollment Begins for
 All Students for All Sessions..... June 8

16-Week Session

Classes Begin..... August 23
 Labor Day Holiday for Students, Faculty,
 and Staff. College offices closed..... September 6
 Last Day to Drop with Tuition Refund
 or Change to Audit (Census Date)..... September 9
 Last Day to Apply for Graduation
 for Fall 2010.....October 1
 Non-Instructional Days/No Classes... October 11–12
 Last Day to Withdraw Without
 Grade Penalty November 1
 Non-Instructional Day for Students
 and Faculty; College Closes at Noon.....November 24
 Thanksgiving Holidays for
 Students, Faculty, and Staff.
 College offices closed.November 25–26
 Non-Instructional Days/
 No Classes November 27–28
 Final Week of Classes December 6–12
 Final Exam WeekDecember 13–19

First 8-Week Session

Classes Begin..... August 23
 Last Day to Drop with Tuition Refund
 or Change to Audit (Census Date)..... August 30
 Labor Day Holiday for
 Students, Faculty, and Staff.
 College offices closed. September 6
 Last Day to Withdraw Without
 Grade Penalty September 27
 Last Day to Apply for GraduationOctober 1
 Non-Instructional Days/No Classes... October 11–12
 Classes and Examinations EndOctober 19

Second 8-Week Session

Classes Begin.....October 20
 Last Day to Drop with Tuition Refund
 or Change to Audit (Census Date).....October 27
 Last Day to Withdraw Without
 Grade Penalty November 22
 Non-Instructional Day for
 Students and Faculty; College
 Closes at NoonNovember 24
 Thanksgiving Holidays for
 Students, Faculty, and Staff.
 College offices closed.November 25–26
 Non-Instructional Days/
 No Classes November 27–28
 Classes and Examinations End December 19

Winter Break for Students, Faculty, and Staff.
 College offices closed. NOVAConnect registration
 only:..... December 24, 2010 –January 2, 2011



SPRING SEMESTER 2011

***Please check NOVAConnect for the start dates and census dates of Dynamic Sessions**

Advising Week for Spring SemesterNovember 1–5
 NOVAConnect Web/Telephone
 Priority Enrollment Begins for
 Continuing Students..... November 9
 NOVAConnect Web/Telephone
 Open Enrollment Begins for
 All Students.....November 15

16-Week Session

Classes Begin..... January 10
 Martin Luther King Day Holiday
 for Students, Faculty, and Staff.
 College offices closed. January 17
 Last Day to Drop with Tuition Refund
 or Change to Audit (Census Date)..... January 27
 Last Day to Apply for Graduation
 for Spring 2011 March 1
 Spring Break (No classes).....March 7–13
 Last Day to Withdraw Without
 Grade Penalty March 25
 Final Week of ClassesApril 26–May 2
 Final Exam Week.....May 3– 9
 Commencement Ceremony May 15

First 8-Week Session

Classes Begin..... January 10
 Martin Luther King Day Holiday
 for Students, Faculty, and Staff.
 College offices closed. January 17
 Last Day to Drop with Tuition Refund
 or Change to Audit (Census Date)..... January 18
 Last Day to Withdraw Without
 Grade PenaltyFebruary 14
 Last Day to Apply for Graduation
 for Spring 2011 March 1
 Classes and Examinations End March 6

Spring Break.....March 7–13

Second 8-Week Session

Classes Begin..... March 14
 Last Day to Drop with Tuition Refund
 or Change to Audit (Census Date)..... March 22
 Last Day to Withdraw Without
 Grade PenaltyApril 18
 Classes and Examinations End May 9
 Commencement Ceremony May 15

SUMMER TERM 2011

NOVAConnect Web/Telephone Enrollment
 Begins for All Sessions..... March 29

12-Week Session

Classes Begin..... May 16
 Last Day to Drop with Tuition Refund
 or Change to Audit (Census Date)..... May 27
 Memorial Day Holiday for
 Students, Faculty, and Staff.
 College offices closed. May 30
 Last Day to Apply for Graduation for
 Summer 2011 June 1
 Independence Day Holiday for Students,
 Faculty, and Staff. College offices closed..... July 4
 Last Day to Withdraw Without Grade Penalty July 6
 Classes and Examinations End August 8

First 6-Week Session

Classes Begin..... May 16
 Last Day to Drop with Tuition Refund
 or Change to Audit (Census Date)..... May 23

Memorial Day Holiday for
 Students, Faculty, and Staff.
 College offices closed. May 30
 Last Day to Apply for Graduation
 for Summer 2011 June 1
 Last Day to Withdraw Without Grade Penalty .June 10
 Classes and Examinations EndJune 27

Second 6-Week Session

Classes Begin.....June 28
 Independence Day Holiday for
 Students, Faculty, and Staff.
 College offices closed. July 4
 Last Day to Drop with Tuition Refund
 or Change to Audit (Census Date)..... July 5
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 Grade Penalty July 25
 Classes and Examinations End August 8

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COLLEGE STAFF

Administrative Offices
Brault Building (CH)
4001 Wakefield Chapel Road
Annandale, Virginia 22003-3796

Additional Administrative Offices are located at:
7630 Little River Turnpike (NW)
Annandale, Virginia 22003-3796

College Staff	Room	Telephone
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President

Dr. Robert G. Templin, Jr.	CH305	703-323-3101 323-3026
----------------------------	-------	--------------------------

Executive Vice President, Academic and Student Services

Dr. John T. Dever	CH305	323-3195
-------------------	-------	----------

Associate Vice President, Academic Services

Dr. Sharon N. Robertson	CH316D	323-3198
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Director, Tech Prep and Coordinator, Dual Enrollment

Ruthe Brown	CH205	323-3198
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Associate Vice President, Student Services and Enrollment Management

Dr. Elizabeth P. Harper	CH310B	323-3398
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College Registrar, College Records Office

Alethea Hamilton	NW	unlisted
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Coordinator of International Student Services

Stephen L. Bennett	NW815	323-2272
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Director, Military Services and Outreach

Michael Johnson	ARL Center	
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Director, Student Financial Aid and Support Services

Joan Zanders	NW501	323-3199
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Associate Vice President, Global Studies and Programs

Dr. Paul J. McVeigh, Jr.	CH310D	323-4224
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Director, Grants and Special Projects

Deborah E. Mottsmann Rosen	CH307	323-3154
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Vice President, Office of Institutional Research, Planning, and Assessment

Dr. George E. Gabriel	CH316B	323-3129
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Coordinator, Academic Assessment

Dr. Jennifer E. Roberts	CH316C	323-3008
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Director, Call Center

Linda Barthelus	NW306	323-3409
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Director, Web Services & Digital Media

Cathy Simpson	CT304	323-3515
---------------	-------	----------

Vice President, Finance and Administration

Miguel Angel Garcia	CH212	323-3122
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Budget Director

Ben Pittman	CH214	323-3055
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Compliance Officer

Carlos M. Gutierrez	CH 205	323-3350
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Controller

Jill Bristoe	CH214	323-3125
--------------	-------	----------

Director of College Enterprises

David E. Courter	NW306	764-6012
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College Police

Acting Chief Cheryl Creed	CI Bldg.	323-3111
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Director of Emergency Planning

William N. Flagler, Jr.	CW311	323-3079
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Director, Facilities Planning and Support Services

William Chamberlin	CW307	323-3120
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Director, Human Resources

Myrtho Blanchard	CH203	323-3361
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Director, Purchasing

Edward Mellon	CW314A	323-3083
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Coordinator, Media Processing Services

Sandra J. Beeson	CT126	323-3096
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Vice President, Instructional and Information Technology

Dr. Steven G. Sachs	CH310A	323-3387
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Associate Vice President, e-Learning

Dr. Jennifer Lerner	ELI117	323-3522
---------------------	--------	----------

Director, Extended Learning Institute

Vacant	ELI116	323-3807
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Director, College Information Systems

Arthur M. Cavanagh	CT237	323-3393
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Director, IT Support Services

Allen Sinner	CT226	323-3278
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Acting Director, Technical Applications Center

Deborah Naquin	CT304	323-3488
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Director, IT Client Services

Wayne Ledford		764-7773
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Vice President, Workforce Development

William H. Gary, Sr.	NW812	323-2399
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Director, Government Affairs and Community Relations

Thomas D. (Dana) Kauffman	CH312	323-3753
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Director, Affirmative Action/Minority and Legal Affairs

Everett V. Eberhardt	CH210	323-3266
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Executive Director, NVCC Educational Foundation

John J. Ruffino	NW817	323-3023
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ALEXANDRIA CAMPUS

3001 N. Beauregard Street
Alexandria, Virginia 22311-5097

Associated with the Alexandria Campus, the Arlington Center is located at 4600 North Fairfax Drive, near the Ballston Metro Station in Arlington.

	Room	Telephone
Provost		
Dr. Peter Maphumulo	AA287	703-845-6222
Acting Dean of Students		
Dr. Frances Villagran-Glover	AA195	845-6219
Dean, Liberal Arts Division		
Dr. Jimmie McClellan	AA252	845-6223
Acting Dean, Science, Technology, and Business Division		
Gertrude (Trudy) Streilein	AA352	845-6230
Acting Evening Administrator		
Cynthia Knight	AA287	845-6222
Bookstore		
Faye Amirrashed	AT104	671-0043
Business Office		
Derrick Williams, Business Manager	AA187	845-6450
Campus Police		
Lt. Gerald Tolson	AA240	845-6270
Counseling Services, Coordinator		
Alice Hedley	AA194	845-6301
Financial Aid		
Eleanor Ripton	AA148	993-5096

Off-campus Military Site Credit Programs

Coordinator

John Dyson AA193 845-6124 or
527-5976

Educational Support Services

Dr. David L. Williams, Dean AA334D 845-6255

Information

Technology Services AA343 845-6048

Instructional Support

and Development AA343 845-6257

Learning Laboratory AA332 845-6035

Library AA232 845-6231

Open Computer Center AA159 845-6041

Testing Center AA332 845-6035

Director, College-Wide Student Activities

Brian Anweiler AE213 845-6206

Student Activities

Pat Gordon AA232 845-6304

Student Services Center

Niki Neal, Registrar AA194 845-6330

Veterans Advisor

Dan Duffy AA193 845-6352

Director, Workforce Development and Continuing Education

Christopher Applegate AE213 845-6227

Managing Director, Schlesinger Concert Hall and Arts Center

Dr. Leslie A. White AS102 845-6229

*For campus maps, directions, and building locations, go to www.nvcc.edu/campuses-and-centers/index.html.



ANNANDALE CAMPUS

8333 Little River Turnpike
Annandale, Virginia 22003-3796

	Room	Telephone
Provost		
Dr. Barbara Saperstone	CG202	703-323-3222
Campus Dean of Operations		
Christine Holt	CG202	
Dean of Students		
Dr. Athos Brewer	CG218	323-3382
Dean, Business and Public Services Division		
Adrienne Hinds	CC220A	323-3157
Dean, Liberal Arts Division		
Dr. Bruce J. Mann	CM342	323-3107
Dean, Languages and Literature Division		
Gerald Boyd	CN230	323-4441
Dean, Mathematics, Science, and Engineering Division		
Dr. Abe Eftekhari	CS206	323-3109
Coordinator, Evening Administration		
Dr. Andrew S. Goldstein	CT232	323-3723
Adjunct Faculty Specialist		
Ethel Brent DeLaney	CT232	323-3169
Bookstore		
Michelle Rundblade	CG124	323-3185
Business Office		
F. R. Tittmann, Jr., Business Manager	CG202	323-3131
Campus Police		
Sgt. Robert Russell	CI Bldg.	323-3111
Community Education		
Martha E. Kossoff	CE202	323-3168

Coordinator, Counseling Services

Dr. Juneious Tucker CG205 323-3200

Credit Program Developer

Dr. Lisa R. O'Quinn CF213B 323-3164

Financial Aid

Patricia Bass CG206 323-3556

Amber Clark CG204 764-7781

Information and Instructional Support Services

Judith A. Gustafson, Director CG402 764-7757

Faculty/Staff

Resource Center CG413 323-3829

Information

Technology CG402 323-4259

Open Computer Labs CT105 323-3726

Educational Support Services

Carol Sinwell, Acting Dean CG302 323-3004

Academic

Support Services CG406 323-2221

Library CG300 323-3128

Testing Center CG404 323-3149

Student Activities

Michelle Garel CF228 323-3484

Calvin Haney CF224 764-0122

Student Support Services

Marilyn Deppe, Coordinator CG206 323-3328

Student Services Center

Kimberly C. Ellis, Registrar CG206 323-3400

Veterans Advisor

Romulo D. Sarmiento CG206 323-3145

Workforce Development and

Continuing Education

Dr. Robert R. Vaughn,

Director CE202 323-4068

*For campus maps, directions, and building locations, go to www.nvcc.edu/campuses-and-centers/index.html.



LOUDOUN CAMPUS

1000 Harry Flood Byrd Highway
Sterling, Virginia 20164-8699

Associated with the Loudoun Campus is the Reston Center, located at 1831 Wiehle Avenue.

	Room	Telephone
Provost		
Dr. Julie Leidig	LR252	703-450-2517
Acting Dean of Students		
Renee McLaurin	LR242	450-2512
Dean, Communications and Human Studies Division		
Dr. Beverly A. Blois, Jr.	LR304	450-2527
Dean, Natural and Applied Sciences Division		
Joyce Samuels	LR303	450-2575
Bookstore		
Alfred E. Lyon	LR111	450-2589
Business Office		
Mitchell Markon, Business Manager	LR241A	948-774

Campus Police

Sgt. John "Ski" Stasiowski LR241 450-2540

Counseling Services

Titus Lane,
Acting Coordinator LR253 450-2571

Financial Aid

Payam Nikouei LR242A 450-2537

Educational Support Services

Acting Dean, Vacant LR249C 450-2564

Learning Laboratory

LR251 450-2508

Library

LR249 450-2547

Information Technology

LR209 450-2660

Student Activities

Tiffany Laing LR253 450-2571

Student Services Center

Gert Heslin, Registrar LR246 450-2501

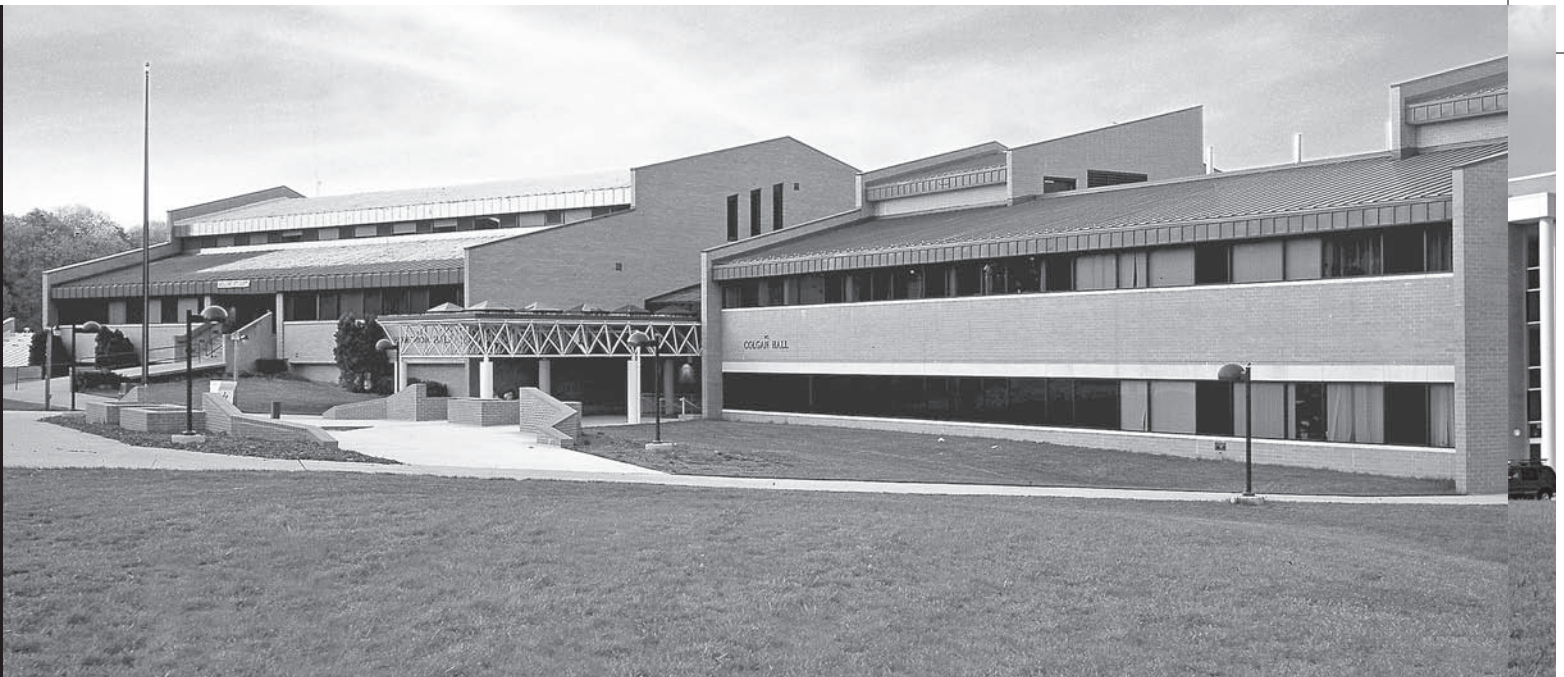
Veterans Advisor

Brian Royer LR246 450-2583

Workforce Development and Continuing Education

Esther Perantoni, Director LR252 450-2597

*For campus maps, directions, and building locations, go to www.nvcc.edu/campuses-and-centers/index.html.



MANASSAS CAMPUS

6901 Sudley Road
Manassas, Virginia 20109-2399

	Room	Telephone
Provost		
Dr. Hortense Hinton	MH317	703-257-6664
Dean of Students		
Dr. Mark Kidd	MH313	257-6660
Dean, Communications Technologies and Social Sciences Division		
Dr. Ronald Buchanan	MC234	257-6685
Dean, Science and Applied Technologies Division		
Dr. Dariel (Dee) Martin	MC330	257-6606
Bookstore		
Nira Shahi	MH109	257-6667
Business Office		
Nancy V. Wyatt, Business Manager	MH310	257-6628
Campus Police		
Sgt. D. J. Anglin	MH309	530-8278

Counseling Services	MH110	257-6610
Financial Aid		
Taka Perry	MH110	257-6613
Sharne Asfall	MH110	257-6614
Educational Support Services		
Lynn Bowers, Acting Dean	MC129D	257-6641
Learning Laboratory	MH112	257-6645
Library	MC129	257-6640
Testing Center	MH112	257-6645
Innovation Park		530-8266
Student Activities		
Leif Corbett	MH110J	257-6665
Student Services Center		
Rita Archer-Clark, Registrar	MH111	257-6624
Veterans Advisor		
Carol Oandasan	MH110	257-6675
Workforce Development and Continuing Education		
James Fabian, Director	MH411	257-6632

*For campus maps, directions, and building locations, go to www.nvcc.edu/campuses-and-centers/index.html.



MEDICAL EDUCATION CAMPUS

6699 Springfield Center Drive
Springfield, Virginia 22150-1913

	Room	Telephone
Provost		
Brian Foley	HE205E	703-822-6699
Dean of Students		
Beatrice Veney	HE203A	822-6537
Dean, Allied Health Division		
Andrew Cornell	HE205D	822-6548
Dean, Nursing Division		
Dr. Florence Richman	HE205B	822-6698
Acting Dean, Educational Support Services		
Ruth Stanton	HE341C	822-6679
Business Manager		
Michael Blackwell	HE204E	822-6514
Information Support Services		
Wayne Ledford	HE323	764-7773
Academic Success Center Manager		
Kathleen Odige	HE116	822-6534
Open Computer Lab	HE343	822-6671
Testing Center	HE344	822-6654
Tutoring Center	HE106	822-6569

Bookstore Manager

Diana Throckmorton HE106 822-6605

Campus Police

Sgt. John DeGurse HE102G 822-6666

Counseling Services

Sherri Anna Robinson HE203E 822-6546

Financial Aid

Dietrich Giles HE202D 822-6540

Grants Development

Gail Jackson HE205C 822-6617

Instructional

Technology Services HE325 822-6667

Library

HE341 822-6684

Police and Public Safety

HE102G 822-6666

Student Activities

Patricia Martin-Mattocks HE116 822-6598

Student Services Center

Angelique Robinson, Registrar HE204F 822-6658

Workforce Development and

Continuing Education
Harriet Zimmerman HE210 822-6521

*For campus maps, directions, and building locations, go to www.nvcc.edu/campuses-and-centers/index.html.



WOODBRIDGE CAMPUS

15200 Neabsco Mills Road
Woodbridge, Virginia 22191-4099

	Room	Telephone
Provost		
Dr. Sam Hill	WC233	703-878-5751
Dean of Students		
Mr. Michael Turner	WC256	878-5759
Dean, Business and Social Sciences Division		
Dr. Lisa Donaldson	WC302	878-5637
Dean, Communications and Humanities Division		
Dr. Daniel C. Lewis	WC402	878-5716
Acting Dean, Natural Science and Mathematics Division		
Dr. Timothy Seaman	WC208	878-5723
Bookstore		
Cameisha Chin	WB	878-5774
Business Office		
Cory Thompson, Acting Business Manager	WC231	878-5701
Campus Police		
Sgt. Randall Carlock	WC102	878-5744

Counseling Services/Financial Aid

Mark Bumgarner WC202C 878-5760

Financial Aid

Shirley Delgado WC229B 878-5863

Educational Support Services

Lynn Feist, Acting Dean WC427B 878-5872

Information

Technology Services WC336C 878-5659

Instructional

Support Services WC438 878-5731

Library

WC427 878-5733

Open Computer Lab

WC336 878-5713

Testing Center

WC436 878-5787

Student Activities

Matthew F. "Tank" McCarl WC158 878-5729

Student Services Center

Zina G. Jemison, Registrar WC202A 878-5737

Veterans Advisor

Diane Malone WC229 878-5748

Workforce Development and

Continuing Education
Katreena Arnold WC226 878-5754

*For campus maps, directions, and building locations, go to www.nvcc.edu/campuses-and-centers/index.html.

EXTENDED LEARNING INSTITUTE – DISTANCE LEARNING

The Extended Learning Institute (ELI) offers distance learning courses to students who prefer to study independently, who require a more flexible schedule for their academic work, or who seek to complete NOVA courses while residing outside the local area. Twelve NOVA degrees/specializations and ten certificates can be earned at a distance, and courses are available in a wide variety of additional disciplines. See the distance learning Web site (<http://eli.nvcc.edu/>) for a complete listing.

Most coursework may be completed at home, although some courses require some face-to-face participation. For each 3-credit course, plan to study at least 6-9 hours each week. All ELI distance learning courses require regular Internet access. Some ELI courses are self-paced, while others have regular deadlines for course progress. When taking an ELI course, you will have faculty and campus support when you need it. Faculty provide valuable assistance by telephone, e-mail, office visits, or through the mail. In many ELI courses, you interact with the instructor and other students via e-mail, voice mail, or the Internet. ELI has counselors and other support staff to assist you, and the NOVA campuses provide additional student services such as computer labs and in-person tutoring. Each course will include two or more proctored exams/assignments. These exams should be taken on campus in one of the NOVA campus Testing Centers; for students who live outside the Northern Virginia area, ELI can generally approve a proctor so that you may take your exam at an educational institution or military base near you.

You may enroll in ELI distance learning courses the same way you enroll in on-campus courses, including NOVAConnect on-line and telephone registration. Many ELI courses have multiple sections starting throughout the semester. When course capacity limits are reached, ELI sections are closed to further enrollment. Advising for ELI courses is available from the ELI counselors. If you are a

veteran and enroll in an ELI course, you will not be certified for benefits until you satisfactorily complete the course. If you are an international student, certain restrictions apply to how many ELI credits you may take in a given semester.

The Extended Learning Institute has no testing center. ELI offices are located at 8000 Forbes Place, off Port Royal Road, behind the Ravensworth Shopping Center in Springfield, just off the Capital Beltway, I-495, Braddock Road exit, Number 54A.

For information or assistance, see "Extended Learning Institute Course Requirements" in the Administrative Information section of this catalog or visit the Distance Learning Web site at <http://eli.nvcc.edu>. You may write to the Extended Learning Institute, Northern Virginia Community College, 8333 Little River Turnpike, Annandale, VA 22003-2796. You may also telephone 703-323-3368 or 703-323-3347.

ELI Staff	Telephone
Associate Vice President, eLearning	
Dr. Jennifer Lerner	703-323-3522
Director, Extended Learning Institute	
Vacant	703-323-3807
Registrar (ELI)	
Jayne Townend	703-323-3368
Counselors	
Kim Burkle	703-323-3712
Christy Jensen	703-323-3403
Manny Bartolotta	703-323-3324
David Highsmith	703-323-2404

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 W. 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 distance 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. In 2006, the College opened two new educational centers, one in Arlington and the other 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 academic year 2009-2010, the College served more than 70,000 students in credit courses and another 17,875 in non-credit courses. More than 275,000 people came to NOVA campuses throughout the year for various cultural and enrichment activities.

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-curricula 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 activities.

The College operates on the semester system with 16-week fall and spring semesters and a 12-week summer term. Many courses are offered in shorter sessions to meet the needs of students, business and industry.

VIRGINIA COMMUNITY COLLEGE SYSTEM

As stated above, the 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 College also has a Business and Industry Partnership Advisory Committee and a Military and Government Partnership Advisory Committee to expand education and training services to the community.

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 Commission on Colleges of the Southern Association of Colleges and Schools 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 at 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. 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 (1) the Allied Health and Nursing programs, accredited by the 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, the National Accrediting Agency for Clinical Laboratory Sciences, and the National League for Nursing Accrediting Commission; (2) the Culinary Arts Certificate, an apprenticeship program recognized by the American Culinary Federation; (3) the Paralegal Studies program, approved by the American Bar Association; and (4) 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, VISION, AND GOALS

The mission of Northern Virginia Community College is to respond to the educational needs of its dynamic and diverse constituencies through an array of comprehensive programs and services that facilitate learning and workforce development in an environment of open access and through lifelong educational opportunities.

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 your learning experiences beyond the major area of study. The following are the College's general education goals:

Communication

Students will demonstrate the ability to:

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

Critical Thinking

Students will demonstrate the ability to:

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

Cultural and Social Understanding

Students will demonstrate the ability to:

- a. assess the impact that social institutions have on individuals and culture—past, present, and future;
- b. describe their own as well as others' personal ethical systems and values within social institutions;
- c. recognize the impact that arts and humanities have upon individuals and cultures;
- d. recognize the role of language in social and cultural contexts;
- e. recognize the interdependence of distinctive world-wide social, economic, geo-political, and cultural systems.

Information Literacy

Students will demonstrate the ability to:

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

Personal Development

Students will demonstrate the ability to:

- a. develop and/or refine personal wellness goals;
- b. 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:

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

Scientific Reasoning

Students will demonstrate the ability to:

- a. generate an empirically evidenced and logical argument;
- b. distinguish a scientific argument from a non-scientific argument;
- c. reason by deduction, induction and analogy;
- d. distinguish between causal and correlational relationships;
- e. recognize methods of inquiry that lead to scientific knowledge.

PROGRAMS

Northern Virginia Community College is a comprehensive institution of higher education, offering programs of instruction generally extending not more than two years beyond the high school level.

College Transfer Education

The College transfer program includes courses typical of the first two years of a baccalaureate program in arts and sciences or preprofessional 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, if you are planning to transfer, you should check the requirements of the receiving institution before you plan your course of study at NOVA.

For more information on college transfer, refer to “Transfer Credit and Advanced Standing” in the Administrative Information section and to “Transfer Programs Information” in the Instructional Programs section.

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 for admission to 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, international F-1 visa students, or other visitors to the United States. The two principal NOVA ESL programs are College ESL and the American Culture and Language Institute (ACLI), which is housed in the Office of Workforce Development and Continuing Education. 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.

One of NOVA's principal ESL programs is College ESL. Students in this ESL program build the academic literacy and critical thinking skills necessary for success in American higher education. College ESL consists of four levels of instruction from Level 2 (low-intermediate ESL) through Level 5 (advanced ESL). Students in the top two levels of instruction are often concurrently enrolled in general education courses in a variety of disciplines.

NOVA's other principal ESL program is the ACLI, offering classes to residents of Northern Virginia and other visitors in its Core Skills ESL and Specialty Courses programs, and to international F-1 visa students in its Intensive English Program. ACLI courses range from introductory to intermediate-level ESL. Many ACLI students go on to take classes in College ESL and academic disciplines. They also prepare for entry or advancement in the workforce.

Students take a placement test to assess their proficiency prior to enrolling in ESL courses. The current placement test is the ACCUPLACER. Students who score below 225 on the ACCUPLACER and students on F-1 visas who place at College ESL Levels 2 and 3 are referred to the ACLI. ACLI courses are fee-based. 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

Continuing Education programs are offered to enable you to continue your learning experiences. Continuing Education programs may include credit and non-credit courses offered during the day and evening hours. The College awards Continuing Education Units (CEU) upon completion of most non-credit 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 non-classroom and non-credit 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 company. To provide this service, the NOVA Workforce Development and Continuing Education Offices deal 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, call the director of Workforce Development and Continuing Education on any NOVA campus.

EDUCATIONAL SUPPORT SERVICES

Educational support services 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 non-print 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. 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 microcomputer installation, hardware and software troubleshooting, telephone services, network connections, and technology training.

Television Services

Television production, video streaming, and satellite downlinking services are provided by the Television Center. Virginia Distance Education Network video links among the campuses and other colleges are provided and supported by the College Television Center and supported by campus staff. The Television Center is located on the Annandale Campus and provides a complete television production, editing, and transmission facility. The Television Center provides a direct link to local cable-TV systems for credit telecourses and other College programming. The Center 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 and 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 non-graduate students who achieve 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. If you have interest in the Alumni Federation, contact the assistant director of the Educational Foundation, 7630 Little River Turnpike, Annandale, Virginia, 22003, at 703-323-3749.

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.

Searches for outside funding are pursued in such areas as workforce development, professional development, purchase of equipment, student services, and curriculum development.

ADMINISTRATIVE INFORMATION

STUDENT CLASSIFICATIONS

Curricular Student

You are classified as a curricular student when you declare a major, that is, when you are admitted to a curriculum of the College. You 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. Your 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.

Non-Curricular Student

If you have not requested admission to a curriculum or developmental program, you may still enroll in courses by identifying your reason for enrolling at NOVA. You are expected to declare a major prior to completing 30 credit hours of course work. You may be classified as a non-curricular student under one of the following circumstances:

1. You are upgrading employment skills for your present job.
2. You are developing skills for a new job.
3. You are exploring a new career.
4. You are seeking personal satisfaction or general knowledge.
5. You are a transient (visiting) student. You may be enrolled at NOVA while maintaining primary enrollment with another college or university.
6. You are a non-degree transfer student. You 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.
7. You are a high school junior or senior or the home school equivalent. You must submit a Dual Enrollment form (125–207 for individual high school students, 125–208 for home schooled students or 125–209 for high school students taking a contract course) signed by your parent or guardian and your principal to enroll at the College.
8. Your general or curricular requirements are pending. You 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.
9. Your desired program has restricted enrollment. You may meet admission requirements of a specific curriculum but be temporarily

denied entry because of an enrollment limitation. You may enroll in other courses while waiting for entry into your chosen curriculum, with approval of the College.

Full-Time Student

You are considered a full-time student if you are enrolled in 12 or more credits of course work in a semester or summer term.

Part-Time Student

You are considered a part-time student if you are enrolled in fewer than 12 credits of course work in a semester or summer term.

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 excluding College Success Skills (SDV 100). To enroll in more than 18 credits, you must have a 3.00 grade point average or higher and the approval of the dean of students at your primary campus.

ADMISSION REQUIREMENTS

Admission to the College

If you have a high school diploma or the equivalent, or you are at least 18 years of age, and you are able to benefit from enrollment, you are eligible for admission to Northern Virginia Community College.

High school and home schooled students may be eligible to enroll in certain dual enrollment courses. See page 25.

The College welcomes transfer students from other colleges and, when you meet NOVA's admissions requirements, you may be admitted with no restrictions.

All applicants must complete the Application for Admission. At this time, you are strongly advised to seek the assistance of counselors for academic, career, or transfer information. You are also strongly advised to take the English placement test at this time since demonstrated English ability is required for enrollment in most courses. 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, and (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 you to apply early to the College if you 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 your success in your chosen curriculum and to evaluate for college-level courses. Transcripts may be required in some cases, i.e., prior to dual enrollment, to grant credit for Tech Prep or advanced placement courses, or to verify prerequisites for college-level courses.

High school transcripts are required in order to be considered for admission to the following curricula: Veterinary Technology, Dental Hygiene, Diagnostic Medical Sonography, Health Information Management, Nursing, Physical Therapist Assistant, and Respiratory Therapy. Transcripts are preferred for Emergency Medical Services Technology. Contact the appropriate campus Student Services Center regarding admission to these programs.

The Application for Admission is online at www.nvcc.edu. Application for Admission forms may also be mailed to the Student Services Center of your choice. You are urged to submit your Application for Admission to the College at least 30 days prior to the first day of classes for the semester in which you plan to enroll. This should provide you with the opportunity to attend the new student orientation or meet with a counselor for academic assistance prior to enrollment, and give you time to take required placement tests.

The College reserves the right to evaluate Applications for Admission and to refuse admission if the College determines that the applicant is a threat or a potential danger 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.

When you enroll as a student at NOVA, you accept the rules and regulations of the College. Any violation will be subject to appropriate action by the College.

Readmission to the College

Former NOVA students who have not been enrolled for three years (nine consecutive terms) and wish to reapply for admission must also complete an Application for Admission.

Visiting (Transient) Students – Special Provisions for Students Currently Enrolled at Four-Year Colleges and Universities

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. To qualify for this

special provision, students must provide specified documentation showing current enrollment or admission to a four-year college or university. Full information and directions are available at www.nvcc.edu/future-students/visiting-college-students/index.html.

Admission to a Curriculum

In addition to the general admission requirements for acceptance by the College, there are specific curricular requirements listed in the “Instructional Programs” section of this catalog. Check the curriculum of your choice to see if you have met the required prerequisites for enrolling in that curriculum. If you do not meet these requirements, you may be able to make up deficiencies by taking developmental or other courses.

To change from one curriculum to another, you must contact a counselor.

Readmission to a Curriculum

If you wish to be readmitted to a restricted program after non-attendance for at least one year, please consult the specific program listing under Programs of Study for detailed readmission requirements. If you were placed in a non-restricted program, you will not have to reapply for admission to your curriculum; however, you should check to see whether the program requirements have changed since your last attendance.

English Language Requirement

In order to enroll in most courses, students are required to achieve a satisfactory score on the College English placement test. Regardless of course selection, all students will be required to take the English placement test prior to registering for the 16th credit.

International Students

NOVA is authorized by federal law to enroll non-immigrant students. The College must comply fully with federal law and regulations regarding admission of non-immigrant students and issuance of the I-20 form, Certificate of Eligibility for Non-Immigrant (F-1) Student Status, for student visas. College policies apply equally to all students regardless of immigration status, except as restricted by federal law or regulation.

Student Visas (F-1 Status). If you require student immigration status (F-1), the following prerequisites must be met before the College can issue an I-20 form, Certificate of Eligibility for Non-Immigrant (F-1) Student Status.

1. You must submit an application to apply for full-time enrollment to the College.
2. You must submit documentation of eligibility, including the following items:
 - a. An official or certified copy of your secondary school diploma or certificate equivalent to a U.S. high school diploma.

- b. Verification of financial support.
- c. Demonstration of proficiency in the English language:

For academic degree programs, you must submit a TOEFL score.* If your TOEFL score is 500 or higher (paper test) or 173 (computer based), you may be admitted to a degree program (using an Academic I–20). Once on campus, you will take the College’s ACCUPLACER test, which indicates the level at which you may begin your studies at the College.

If English is your first language and you are from a country where English is the official language, a TOEFL score is not required.

- d. A TOEFL score is not required for the intensive English–language program through the College’s Continuing Education Program. NOVA will issue you a Language Training I–20.

* International students who are visiting the College may submit an application and take the ACCUPLACER test. These test results can be used in place of TOEFL scores when submitting I–20 packets.

All required documents and test scores for I–20 applicants must be received by the published deadline. For application deadlines, please visit the F–1 International Student Web site at www.nvcc.edu/future-students/international-students/index.html.

If your native language is not English, you must complete the English placement test (ACCUPLACER) before you enroll in classes. Your test score may require that you complete English as a Second Language (ESL) courses—in College ESL or in the ACLI before enrolling in any other courses. In order to maintain your F–1 visa status, you must enroll as a full–time student. You should meet with an academic advisor when you arrive at the college to ensure that you meet this enrollment requirement. F–1 international students may not take more than 3 credits or one course per semester through online or distance education.

If you are in the United States and already have F–1 status but wish to transfer to NOVA, you must contact your current school regarding your eligibility to transfer. If you currently hold another type of immigration status, or need further information about student visas, please visit our F–1 International student Web site at www.nvcc.edu/international.

Other Immigrant Status. It is the policy of Northern Virginia Community College to admit to the College those applicants who are immigrants residing in Virginia who 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 undocumented will pay tuition at the out–of–state rate.

Dual Enrollment of High School Students and Home Schooled Students

Dual Enrollment Student Admissions

Dual enrollment allows students to earn college credit while still in high school. If you are a high school junior or senior, or the home school equivalent, you may be able to take NOVA courses under certain conditions. You may be able to use some dual enrollment courses to meet high school graduation requirements, but you may also be eligible to take courses that you do not intend to apply toward high school graduation. Dual enrollment courses are college courses, so they have college–level content and include college–level discussions. When you take a dual enrollment course, you will have a NOVA transcript that documents the course you take and the grade you receive in it.

High School Students. High school juniors or seniors may be eligible for admission to NOVA. You may be able to take some dual enrollment courses at a NOVA campus or you may be able to take NOVA courses taught at your 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. It is required that all freshman and sophomore students meet established institutional placement criteria prior to enrolling in dual enrollment coursework. Because enrolling freshman and sophomore students is considered exceptional, each freshman and sophomore student will be treated on a case–by–case basis and require formal approval by the College president.

High school students who wish to take classes on a NOVA campus must submit a completed and signed 125–207 dual enrollment recommendation form, which the campus dean of students or his/her designee will review. This form includes a place to list any NOVA courses you wish to use to fulfill Virginia high school graduation requirements. Your high school principal and high school counselor must sign the form, both to indicate that they believe you are ready for college–level work and to show that they will allow you to use the NOVA course to meet graduation requirements. Your parent or guardian must also sign the form to indicate that they believe you are ready for college courses.

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 contract classes are arranged each semester with the high school administration. Contact your high school counselor for more information about dual enrollment courses that may be offered at your high school.

Home Schooled Students. If you are the home schooled equivalent of a high school junior or senior you may be eligible to take courses at NOVA. Dual enrollment is considered enrichment to the home school program and cannot substitute for the home school experience. Home schooled students must submit a completed and signed 125–208 Dual Enrollment recommendation form and 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.

Other Policies and Procedures Regarding Dual Enrollment

The following policies and procedures will apply to the dual enrollment of high school and home schooled students:

- a. 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.
- b. Dual enrollment students who take classes on campus must be high school juniors or seniors.
- c. Applicants for dual enrollment must apply to the college at least two weeks prior to the start of classes. Applicants are encouraged to apply online at www.nvcc.edu.
- d. Dual enrollment students must take the College placement test (or score 550 or higher on the critical reading section of the SAT) and place into ENG 111/9 or higher to take any NOVA class on campus. In addition, students who intend to take a math course must also take the math placement test.
- e. Dual enrollment students must also meet all course prerequisites.
- f. Dual enrollment students who take classes on campus must complete the 125–207 form (for individual high school students) or the 125–208 form (for home schooled students). These forms can be found online at www.nvcc.edu/forms/.
- g. Before final approval of a dual enrollment request is granted, dual enrollment students who take classes on campus must meet with a NOVA counselor and/or the dean of students at the campus they plan to attend. Students should bring a sealed official high school transcript to the meeting.
- h. Dual enrollment students who take classes on campus must register for college classes in person.
- i. Dual enrollment students cannot declare a major.
- j. Dual enrollment students are not eligible for college-based financial aid.
- k. Dual enrollment students are restricted to part-time enrollment (fewer than 12 credits per semester).
- l. Dual enrollment students generally are not permitted to enroll in developmental courses.
- m. Dual enrollment students generally are not placed in Extended Learning Institute (ELI) courses.
- n. 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 Web site: go to www.nvcc.edu, click on "Future Students," and then select "High School and Home School Students" under Checklists.

NOVAConnect Student Information System (SIS)

NOVAConnect is the name for the College's Student Information System (SIS). To access NOVAConnect you will need an Internet connection, a Web browser, and a student ID number. NOVAConnect allows you to complete online many of your business transactions with the College. You will be able to do the following by clicking on the NOVAConnect icon located on the front page of NOVA's Web site and following the directions:

- Obtain your student ID number.
- Apply for admission.
- Register, add, drop, and swap classes.
- Search for classes by availability, day, instructor, and location.
- View and print your class schedule.
- Check your degree progress report.
- Review grades and print unofficial transcripts.
- Request an official NOVA transcript.
- View transfer credit.
- View advisor information and e-mail advisor from NOVAConnect.
- View course/grade history.
- View account summary, including tuition and fees.
- Check Financial Aid eligibility status.
- Review Financial Aid award.
- View Financial Aid history.
- Apply for Financial Aid.
- Update personal information, such as addresses and phone numbers.
- Submit your application for graduation.

Student ID Number

Your Student ID will be used throughout your NOVA College career to identify you in NOVAConnect and your College records. NOVAConnect assigns a 7–digit Student ID number at the time you apply for admission.

Social Security Number

Your Social Security number is required to be on file as part of your student record, but it will not be used as a student ID number. If you are receiving financial aid, however, it 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 students through the student activities fee. The cards are distributed through campus NOVACard Offices. You should wait 24 hours after first registering for classes before going to a campus NOVACard Office to obtain your ID card. ID cards may be required for library material use, admissions to special student activities, and so forth. Lost cards will be replaced at a fee of \$10.00. 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. You may review your official records by making a request to the Student Services Center. NOVA will not release any personally identifiable information about you without your permission, except to certain school and governmental officials as provided by the 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. Your permission for the College to release any information must also be in writing. Information that is considered public information is described in the current issue of the College *Student Handbook*.

Campus of Record

Once admitted to the College you may take courses at any campus, 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, faculty advising, participation in activities, testing,

etc. Faculty advising and graduation certification must be completed at a campus that offers your major. This is especially true of restricted majors, such as allied health, nursing, and veterinary technology. If you have questions about where or how to use the services of the College, contact the Student Services Center at any campus.

Assessment and Placement Testing

Basic skills assessment and placement testing are intended to assist you in selecting courses and designing an academic program in which you will most likely be successful. These tests are not admissions tests. However, you are required to demonstrate a specified level of English proficiency in order to enroll in most college credit courses.

Prior to testing, you must have submitted an Application for Admission to the College. A government–issued photograph identification, such as a driver's license, is required when you come to the Testing Center to take the tests. You will not be permitted to take backpacks, coats, or other personal effects into the Testing Center and you will be required to turn off your cell phone.

For information about testing or testing accommodations, contact a campus Counseling Services Center or Testing Center.

1. Basic Skills Assessment

Assessment of your strengths and weaknesses in reading, writing, and mathematics will help you determine the appropriate courses to select. This assessment is accomplished through a group of basic skills assessment tests administered through the Testing Center at each campus.

You are encouraged to take basic skills tests in reading, writing, and mathematics before you enroll in classes. If you have not taken the basic skills tests and have a cumulative grade point average (GPA) of less than 2.00 after the completion of 9 semester hours at NOVA, or if you are transferring to NOVA with a cumulative GPA of less than 2.00 (regardless of the number of hours completed), you must take the basic skills test in reading and writing. A counselor will determine if it is appropriate for you to take basic skills tests in mathematics as well. Students who entered NOVA in the fall 2002 semester or later, regardless of the GPA, must take the English placement test prior to registering for the 16th credit.

The following courses are exempt from the placement test requirement:

ADJ 100
ART 121, 122, 131, 132, 153, 154, 221, 222, 223, 231, 232, 235, 236, 237, 241, 242, 243, 244, 253, 254, 258, 271, 272, 277, 299

CHD	205
CIV	171, 172
EDU	235
MUS	101, 102, 131, 132, 136, 138, 141, 142, 145, 148, 149, 155, 159, 163, 164, 165, 175, 185, 198, 199, 231, 232, 236, 237, 238, 241, 242, 245, 248, 249, 255, 259, 265, 275, 285
PED	all courses except 116 and 220.
SDV	100, 107, 109 (101, 106 and 298 are not exempted)

Students who scored 550 or better on the Critical Reading portion of the SAT exam may register for ENG 111 without further testing.

2. Course Placement Testing

Most courses require that you obtain a minimum score on one or more placement tests before you may enroll in those courses. If your scores on the required placement test(s) are below the prescribed minimums, you must complete prescribed developmental studies courses. The developmental studies course(s) required will be determined by your scores. These requirements apply to all campuses and ELI, unless specifically waived by the responsible division dean.

Testing Centers:

Alexandria Campus:	AA 332
Annandale Campus:	CG 404
Loudoun Campus:	LR 251
Manassas Campus:	MH 112
Medical Education Campus	HE 344
Woodbridge Campus:	WC 436
Extended Learning Institute:	
Any NOVA campus Testing Center.	

Placement test scores are valid for a limited time period according to the following:

1. English (reading and writing) scores are valid for 3 years; tests may be repeated after 6 months.
2. Math scores are valid for 12 months; tests may be repeated after 3 months.
3. English as a Second Language (ESL) scores are valid for 12 months; tests may be repeated after 6 months if you score below Level 2 and after 12 months if you score Level 2 or higher.
4. Ability To Benefit (ATB) scores are valid for 12 months; tests may be repeated after 12 months.

3. Course Prerequisites

Some courses require prerequisites or co-requisites. These requirements, which were established to foster your success in the course, are identified in

the Description of Courses section of this catalog. You may not enroll in a course for which you 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.) You may be administratively dropped from any course for which you have not met the prerequisite.

In a course that requires placement tests, if you do not obtain the required minimum scores to enter a course, you must 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. If you are not experienced using a computer, there are introductory courses available to help you increase your proficiency.

REGISTRATION/ENROLLMENT

Before you register or enroll in classes, you must be admitted to the College. Refer to the Schedule of Classes for specific instructions on how and when to register. Students may register by using one of the following methods:

- Web – NOVAConnect at www.nvcc.edu/novaconnect (online Student Information System).
- Telephone – NOVAConnect Telephone at 703-323-3770. From Prince William County, call 703-330-3770.

Change of Enrollment

Schedule changes may be made by using the online NOVAConnect Web system and/or the NOVAConnect telephone system. Changes are effective at the time they are processed.

1. Adding a Course

You may add a course during regular registration (add/drop/swap) or during the “schedule adjustment with permission” period with written permission of the faculty member and division dean, according to the dates published in the Schedule of Classes. If you change your mind about taking a course you’ve added, you must drop the course and process your drop online through NOVAConnect Web or NOVAConnect Telephone. Otherwise, you will be charged for the course and may receive a failing grade.

2. Dropping a Course

You may drop a course and receive a refund during the regular registration (add/drop/swap) period or during the “late schedule additions” period, which ends with the last day to drop with tuition refund (Census Date) as published in the *Schedule of Classes*.

3. 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 carrying the same number of credits.

4. Administrative Deletion

When you enroll in a course, you are expected to attend every class. If you do not attend at least one class meeting or participate in a distance learning class by the Last Day to Drop with a Tuition Refund (also known as the Census Date), your class registration will be administratively deleted. This means that there will be no record of the class or any letter grade on your transcript. Furthermore, your class load will be reduced by the course credits, and this may affect your full-time or part-time student status. Your tuition will not be refunded.

5. Withdrawal from a Course

You may withdraw from a course within the first 60% of a session without academic penalty, and you will receive a grade of W. You may withdraw from a course through NOVAConnect Web/ Telephone or by completing a Withdrawal Initiated by the Student Form – 125–047 and submitting it to the Student Services Center. Withdrawal after the first 60% 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 submitted to the Student Services Center. You may only withdraw after the 60% point if you are in good academic standing. This documentation will be retained electronically. See “Grading System” in this section for an explanation of grades. Your money will not be refunded for courses from which you withdraw. To obtain a refund, you must have dropped the classes within the published tuition deadlines.

Students Receiving Veterans Benefits.

If you have received any veterans benefits, you must also report your withdrawal to the veterans advisor. The Withdrawal Initiated by the Student Form must include your last date of class attendance. Failure to follow established procedures could affect your future eligibility for veterans benefits.

Withdrawal Policy for Students with Federal Financial Aid. If you have received federal financial aid (Title IV) funds and have withdrawn from all your courses within the first 60% of your period of enrollment, you are subject to the mandatory refund policy for federal student financial aid. You must complete a Withdrawal Initiated by the Student (125–047) form and

submit it to the Student Services Center. You must include your last date of attendance in the course. This withdrawal procedure will be considered an “official” college withdrawal.

If you are a financial aid student who stopped attending all courses and did not complete the “official” withdrawal process, but can produce a reportable last date of class attendance (i.e., last exam, last paper, etc.), you will be given an “unofficial” withdrawal based upon your last reported date of attendance.

If you are a financial aid recipient who stopped attending all your courses and your last date of attendance is unknown, the calculation of federal refunds returned will be based upon the midpoint (50%) of the period of enrollment. If you never attended at least one class of each course, you will have your financial aid recalculated based upon your enrollment level of those courses in which attendance was established. You may be liable for repayment of federal funds.

All verbal withdrawal requests must be made to the Student Services Center to complete the established withdrawal procedures.

Financial aid applicants who withdraw from courses may have difficulty subsequently in achieving the satisfactory academic progress standards required for financial aid (see—Satisfactory Academic Progress—under “Financial Aid Information” in this section). Failure to follow established procedures could affect your future eligibility for financial aid benefits.

Specific Course Schedule Changes

The following items describe specific course schedule changes. In some circumstances, you may change courses or sections without additional tuition expense.

1. Regular Course to Developmental Course

In cases where you 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 course work in the first three weeks (21 calendar days) of a 16-week course, you may, with the approval of the instructor, initiate a drop, and enroll in a developmental course that is more suited to your current skills. In making the transfer from the regular course to the developmental course, you will be charged additional tuition on a per hour basis for any additional credit hours. If the exchange results in fewer credit hours, you qualify for a tuition refund only if the transaction occurs during the regular add/drop period for the course being dropped.

2. Developmental Course to Another Developmental Course

You may transfer from one developmental course to another within the same discipline using the add/drop/swap procedure even though this transaction may occur after the standard “last day for tuition refund” (Census Date) for the sixteen-week session. In these cases, the three-week (21 calendar days) limit does not apply. 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, you qualify for a tuition refund only if the transaction occurs during the regular add/drop/swap period for the course being dropped.

3. Course Changes

Course changes after the end of the add/drop/swap period require the approvals of the gaining instructor, the gaining division dean, and the provost. There is no refund for courses dropped after the published Census Date and tuition is charged for courses added.

4. Course Section Changes

You may request a change from one section to another of the same course and course length within the same semester after the “last day for tuition refund” date for the sixteen-week session if you can justify mitigating circumstances. This justification must be recorded on a Change of Section Request After Schedule Adjustment Period form (125-014) and approved by the instructors of the sections involved and their division dean. If such changes are approved, no additional tuition will be charged.

To change from a campus sixteen-week course to an ELI course after the “last day for tuition refund” date, you must receive approval from your campus dean of students or division dean. The dean will contact ELI to determine course availability. If the change is approved, there is no refund eligibility for the ELI course. Changes from a campus to an ELI course will not be made after the halfway point of the semester.

Auditing a Course

You 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 your course load, which will affect your status if you receive financial aid, veterans benefits or hold an F-1 visa. If you wish to change status in a course from credit to audit or from audit to credit, you must complete NOVA form 125-012 Change from Credit to Audit and have it signed

by the instructor and the division dean within the add/drop period for the course (no later than the Census Date). You may also audit Extended Learning Institute courses with the instructor’s permission. Your instructor may still require a certain level of attendance or completion of some assignments: follow the guidelines on the course syllabus or negotiate expectations with the instructor early in the semester.

If you wish to earn credit for a previously audited course, you must retake the course by re-enrolling in the course for credit and paying normal tuition to earn a grade other than “X.” Advanced standing credit should not be awarded for a previously audited course. The NOVA form 125-012 form, available on the college Web site, includes complete instructions for auditing a course.

Extended Learning Institute (Distance Learning) Enrollment

You may enroll in ELI distance learning courses through NOVACONnect Web or Telephone. Many courses have multiple sections starting throughout the semester. Details are available by calling the Extended Learning Institute at 703-323-3368 or checking the Distance Learning Web site. When registering for sequential courses, e.g., ENG 111 and ENG 112, sign up for only one course at a time. If you fail an ELI course, you may not re-enroll in the same section without permission of the instructor. To take 12 or more credits simultaneously through ELI, you must obtain permission from the director of the Extended Learning Institute. Call 703-323-3368 or visit ELI’s Web site at <http://eli.nvcc.edu> for information.

Senior Citizens Enrollment

The Virginia Senior Citizens Higher Education Act of 1974 and amendments allow senior citizens to take classes at no charge under certain circumstances. Before the beginning of the semester in which you want to enroll, you must have (1) reached the age of sixty and (2) had legal domicile in Virginia for one year.

A senior citizen is entitled to enroll and pay no tuition on a space-available basis for the following types of courses, as specified:

1. Credit courses—eligible if taxable income did not exceed \$15,000 in the previous year.
2. Credit courses for audit (receive no credit)—eligible regardless of income.
3. Non-credit courses—eligible regardless of income.

To enroll in credit courses go to the Student Services Center at the campus most convenient to you.

Please note that you may not register until the first day of classes. However, if you have completed seventy-five percent of your degree requirements,

you may enroll at the same time as tuition-paying students. If you apply for free tuition after you register and pay for a class, you are not eligible for a refund for that class. To enroll in non-credit courses go to the Workforce Development and Continuing Education Office Web site for the campus where the course is being offered.

Notes:

- Tuition-paying students are accommodated in courses before senior citizens participating in this program are enrolled.
- If you apply for free tuition AFTER you register and pay for a class, you are not eligible for a refund for that class. If qualified, senior citizens shall pay no tuition or fees for courses, except fees established for the purpose of paying for course materials, such as laboratory fees.
- The College reserves the right to cancel any class.
- Audit and non-credit enrollment is limited to three courses in one term.
- Senior citizens may enroll in ELI courses at any time if there is available space.

FINANCIAL INFORMATION

Tuition

Tuition rates are posted online at www.nvcc.edu/future-students/paying-for-college/tuition-fees/index.html. Tuition generally is due upon registration.

There are several payment options available, which are detailed in the *Schedule of Classes*. Payment of tuition entitles you to use the library, bookstore, food service, student lounge, and other facilities of the College except for parking. You must pay for any school property that you damage or lose, such as laboratory or shop equipment, supplies, library books, and materials.

Some courses, such as music and physical education, may require non-College support services from other agencies and individuals. Costs for these additional charges are paid by you 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, you must be domiciled in Virginia for a minimum of one year before the first official day of classes. When you apply for in-state tuition, you should be prepared to present documentation to support your claim. See the following “Domicile Requirements” section for details.

To change your tuition status from out-of-state to in-state you must initiate the process by completing

the “Domicile Determination Form” section of the Virginia Community College System Application for Admission form, 125-030. This form can be obtained online at www.nvcc.edu/forms/pdf/125-030.pdf 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 clarify your 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, you must be domiciled in Virginia for a minimum of one year before the first official day of classes. Domicile is defined as your “present, fixed home where you return following temporary absences and where you intend to stay indefinitely.” In essence, domicile has two parts, and you must meet both to qualify for in-state tuition. You must reside in Virginia, and you must intend to keep this as your home indefinitely.

Regardless of other factors such as dependency, non-U.S. citizens on 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, as a dependent you have the same domicile as your parents or legal guardian. You are presumed to be a dependent of your parent or legal guardian if you are under the age of 24, unless you (1) are a veteran or active duty member of the U.S. Armed Forces; (2) are a graduate or professional student (beyond a bachelor’s degree); (3) are married; (4) are a ward of the court or were a ward of the court until age 18; (5) have no adoptive or legal guardian when both parents are deceased; (6) have legal dependents other than a spouse; or (7) are able to present clear and convincing evidence that you are financially self-sufficient. Children and the dependent spouse of a Virginia domiciliary may be eligible for in-state tuition. Supporting documents and additional information may be required.

Dependent children who are U.S. citizens may be eligible to establish Virginia domicile separate from their non-citizen 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 your domicile. Following are some examples:

1. Residence during the past year prior to the first official day of classes.
2. State to which income taxes are filed or paid—official income tax return for the state.
3. Driver's license.
4. Motor vehicle registration.
5. Voter registration.
6. Employment—W-2 Form—Wage and Tax Statement.
7. Property ownership.
8. Sources of financial support—Marriage Certificate.
9. 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. If you have been denied in-state domicile status and wish to appeal, see the "Domicile/Tuition Appeal Process" section of the *College Student Handbook* at www.nvcc.edu/resources/stuhandbook/.

Unless you have appealed the domicile decision, once you have paid tuition during any semester, your official domicile status will remain unchanged until enrollment for the next regular semester. However, if an error is discovered in the original domicile decision, the College reserves the right to bill you for tuition due.

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

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 Business Office for updated information and details.

1. Active Duty Military Personnel (Servicemember)

Any active duty servicemembers, 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. Complete the In-state Tuition Form 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 servicemember who voluntarily elects to change his/her domicile to Virginia may qualify for a waiver of the one-year residency requirement by voluntarily electing to establish domicile in Virginia. The one-year residency requirement will be waived 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.

2. Dependents

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. Complete the In-state Tuition Form 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.

Tuition Payment

Tuition is payable by credit card (VISA, MasterCard or American Express) on NOVACONnect Web and Telephone, cash, check, money order, **NOVA's Deferred 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. The College can also accept wire transfer of funds from a bank to pay tuition. You must contact a Campus Business Manager for specific instructions. The College does not accept third-party checks. All checks must include the student's name and identification number.

If you expect your tuition to be paid through a contract or other agency or employer authorization, you agree to accept responsibility for the full amount

of tuition if the tuition due is not otherwise paid within 30 days after invoice.

You should not assume that you will be dropped automatically from classes for which you have not paid. You should drop all classes you do not want to take and confirm your schedule of classes before the end of the add/drop/swap period to assure your tuition bills are what you expect.

Tuition refunds are not automatic except when the College cancels courses. You are eligible for a refund of tuition paid if you drop courses during the official add/drop/swap periods as published in the Schedule of Classes. If you drop courses expecting a refund, you should verify your class schedule and payment status to make sure that all transactions are as expected. You may verify your class schedule by using the NOVAConnect Web site at www.nvcc.edu/novaconnect to print out an unofficial copy of your class schedule and payment status, or through the NOVAConnect Telephone system.

NOVA charges a \$20.00 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 your check is dishonored you 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 for courses canceled by the College. You are eligible for a full refund if you drop one or more of your courses on or before the "last day for tuition refund" (Census Date) as published in the *Schedule of Classes* and as indicated on your official receipt form.

For special session classes the refund period is proportionate to the length of the class. Refund dates will be included in the syllabus mailed to you by ELI when you register and they are also available on the distance learning Web site at <http://eli.nvcc.edu>.

On rare occasions, the College will provide a tuition refund to students who withdraw from courses after the "last day for tuition refund" (Census Date) period. A refund may be authorized in the following circumstances:

1. In the case of an administrative error by NOVA or the VCCS.
2. When during the course of a semester, you suffer an unexpected major medical emergency or extended illness that requires hospitalization, is life threatening, or is contagious presenting a danger to the College community. The medical problem must force absences from more than 10% of class sessions. A physician's verification is required.

3. In the case of your death or if a member of your immediate family (mother, father, sister, brother, husband, wife, or child) dies.
4. When the President of the United States declares a national emergency or a mobilization requiring you to leave school to assume military duties.

To request a refund for one of the above circumstances, you must do the following: (1) Withdraw from the pertinent classes for the semester in question. (2) Write a letter to the campus business manager requesting a refund and providing your rationale and appropriate documentation. For Extended Learning Institute courses, write the Registrar at ELI. (3) Attach any justifying documents, such as doctor's statements, documentation of errors, or copies of death certificates.

If a refund is approved, it will be sent to your address of record. It is your responsibility to make sure your address has been updated on NOVAConnect. If a refund is granted for College error, the course will be dropped from your transcript. If a refund is granted for any reason other than College error, you will receive a W grade showing withdrawal from the course, and that grade will become part of your official transcript. Only in the event of College error, will the class and the W grade be permanently removed from your official record. If a refund is denied, you will receive a letter to that effect, explaining why.

If a refund is approved, it may be prorated. For a problem that occurs in the first quarter of the course, a full tuition refund will be approved. For a problem that occurs in the second quarter of the course, a refund of 50% or half will be approved. No refunds are granted for problems occurring in the second half of a course.

Non-Payment of Debts

Continued attendance at NOVA is dependent upon proper settlement of all debts owed the institution. Should you fail to satisfy all due and payable amounts for tuition and fees, college loans, college fines, dishonored checks, or other debts you owe the College, you may be withdrawn from your courses. You would be assigned W grades for your courses, and those will become part of your official transcript. When the debt is satisfied, you may petition the dean of students to have the W grades removed and to be reinstated in your courses. Until all current debts have been satisfied, a hold will be placed on your records, and you will receive no College services. See "Holds on Student Records/Service Indicators."

If the College has agreed to accept tuition payment from your employer or other third-party provider, and the tuition is not paid within the required time, you are responsible for the tuition payment. As

stated above, continued enrollment is dependent upon proper settlement of the debt. If not paid, you may be withdrawn from your courses. If you 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.

Holds on Student Records/Service Indicators

A hold or service indicator will be placed on your official record under certain conditions. Non-payment of financial obligations, such as tuition, college fines, and other debts will result in a hold on your record. A hold will restrict you from enrolling, having transcripts or grade reports issued, or receiving other college services. Disciplinary action, academic suspension, or dismissal may also result in a hold on your enrollment.

Graduation Fee

There is no fee for graduation. However, students are required to purchase academic regalia to be worn for the Commencement ceremony.

Books and Supplies

You are expected to obtain your own books, supplies, and consumable materials needed in your studies. A bookstore is located on each campus. Check the bookstore Web site at <http://nvcc.bncollege.com> for each campus bookstore's hours of operation.

Transcripts

The official NOVA transcript of your academic record will be issued at no charge by the College Records Office. When you request an official transcript by using NOVAConnect Web, it will be processed within two days. If you submit a written request or form 125-089, Request for Official Transcript to a campus Student Services Center, you should do so at least 10 working days before the transcript is needed. Official transcripts are released only after you have completed one course at NOVA. Financial Aid transcripts are available at no cost through the College Financial Aid Office. You may print your own unofficial transcript from NOVAConnect at www.nvcc.edu/novaconnect.

Library Charges

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

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.

Vehicle Parking Fee

If you wish to park a vehicle in the student parking lots on campus, you must purchase a parking permit each semester/term by going online at www.nvcc.edu/parking or from the Parking Services Offices at the campuses. Proper display of a valid permit entitles you to use any student parking lot on any campus. Specific dates after which permits are required to be displayed are listed in the *Schedule of Classes*. Additional parking information with current prices, regulations and procedures is available in the Parking Services Brochure obtainable online at www.nvcc.edu/parking or from the Parking Services Office/Campus Police. NOVA reserves the right to change any or all of the parking regulations as necessary. All changes will be posted in appropriate locations.

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

There are a limited number of parking meters available at each campus, and there are pay-parking lots/garages at the Alexandria, Annandale, and the Medical Education campuses. No parking permit is required to use these spaces. If you park at a meter or in a pay lot, you must pay the required fee. A College parking permit does not substitute for payment in these spaces.

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 Web site at www.nvcc.edu/finance. The College publishes the Student Financial Aid Services Brochure annually. This publication provides detailed information on application procedures and program eligibility criteria. The brochure can also be found on-line.

Part-time employment is available through the College's Federal and NOVA Work-Study programs. Community service work-study includes the America Reads Tutoring Program. Students must show financial need to participate in Federal Work-Study.

Loans are available through the Federal Perkins Student Loan and the William D. Ford Federal Direct Loan Programs. If you need a loan, you must complete the Free Application for Federal Student Aid (FAFSA) for eligibility determination and enroll at least half time (6 semester credit hours). Information on loan application procedures is on the Web site and is sent to students with award letter notifications.

Federal Pell Grant requires demonstrated financial need through filing the Free Application for Federal Student Aid (FAFSA). Federal Supplemental Educational Opportunity Grants (FSEOG) are available to high-need students with Pell eligibility.

The College Scholarship Assistance Programs (CSAP) and Virginia Community College System (VCCS) provide grant awards for students domiciled in Virginia. The Commonwealth Grant program is provided through the State Council of Higher Education for Virginia to students with demonstrated financial need attending Virginia colleges at least half time. Recipients must make satisfactory academic progress as defined by the State Council for Higher Education for Virginia. The Virginia Guaranteed Assistance Program (VGAP) is a state-funded program for Virginia residents who have graduated from a Virginia high school with a cumulative GPA of 2.50, are classified as dependent for financial aid purposes, and demonstrate financial need. An official high school transcript must be sent to the College Financial Aid Office for eligibility determination.

The District of Columbia offers several grant programs that may be used at the College. Each program has specific eligibility criteria. The DC Tuition Assistance Grant is a residency-based program that pays the difference between in- and out-of-state tuition for qualified applicants. The DC LEAP program is for DC residents and awarded on the basis of demonstrated financial need. More information is available from the College Financial Aid Office or its Web page at www.nvcc.edu/finance.

Applications for need-based financial aid begin with filing the FAFSA. FAFSA on the Web Worksheets are available from Campus Financial Aid Offices or Counseling Services Centers or at www.fafsa.gov. Applications should be completed several months in advance of the semester for which assistance is needed. Applicants for all aid programs, including loans, must file the FAFSA. Completed applications received by May 1 will receive priority consideration for the following academic year.

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 Financial Aid Services Brochure and at www.nvcc.edu/finance.

Satisfactory Progress Standards

Federal regulations require that all student financial aid recipients progress at a reasonable rate or "make satisfactory progress" toward achieving a certificate or degree. The standard applies to all terms regardless of whether or not the student received financial aid. Progress is measured by the student's cumulative grade point average and credits earned in relation to those attempted and the length of the academic program. Satisfactory progress will be evaluated by the College Financial Aid Office after each term.

Note: Students enrolled in some Career Studies Certificate programs are ineligible for student financial aid.

1. Progress Standards

- a. **Completion Rate (67% Rule):** Students must receive a satisfactory grade (defined as a grade of A, B, C, D, R, S, or P) in 67% of the credits for which they enrolled. This calculation is performed by dividing the number of credits earned by the number of credits attempted. For example, for 32 credits attempted, 22 credits must be successfully completed ($22 \div 32 = 68.75\%$). All credits attempted at NOVA are included. This evaluation will be made when a student has attempted credits that total 50% or more of the program requirements.

Note: Federal Stafford Loan borrowers will have satisfactory academic progress reviewed again prior to the disbursement of any loan proceeds.
- b. **Maximum hours (150% Rule):** Students may only receive financial aid for 150% of the length of an associate degree program or an eligible certificate program. All enrollment periods at NOVA and all applicable transfer credits are counted; even semesters when financial aid was not received. Developmental/College ESL course work is excluded in this calculation.
- c. **Transfer students:** Credits officially accepted in transfer and specifically applied toward a student's certificate or degree program may be counted in determining the maximum number of allowable semester credit hours for financial aid eligibility. The student must submit to the College Financial Aid Office a written evaluation by his academic advisor of transfer courses applicable to his program along with the satisfactory academic progress appeal form. If it is approved, the student may continue to receive financial aid.

- d. Students earning a second degree: If a student who already has earned a degree chooses to earn a subsequent degree that requires the same number or fewer credits, any credits already earned will automatically apply toward the maximum number of allowable semester credits for financial aid eligibility.
- e. College ESL/Developmental Studies. Students may receive financial aid for a maximum of 30 semester hours of Developmental Studies courses, if required as a result of placement testing. There is no specific limit on the number of credits of College ESL classes eligible for financial aid.
- f. Cumulative GPA Minimum Requirements (GPA Rule): Students must earn at least the minimum cumulative grade point average, as shown below, once they have attempted a specified number of credit hours. Only courses with grades of A, B, C, D and F are included in this calculation. In order to graduate, a minimum of a 2.0 curriculum grade point average is required.

Total Number of Regular Credits Attempted	GPA Requirement
0–12	Not Applicable
13–23	1.5
24–47	1.75
48+	2.0

*Withdrawals (W grades) which 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 Grades. Courses that are assigned an incomplete grade are included in the 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. Repeating courses adversely affects the student's ability to meet the requirements of the completion rate requirement.

2. Disqualification for Financial Aid

- a. Students who are identified as having met the college's definition of "Academic Suspension" are immediately disqualified for financial aid eligibility.
- B. Students who do not meet the credit progression schedule and cumulative grade point average standard will be disqualified from receiving student financial aid.
- C. A student who is removed from financial aid eligibility more than one time for failure to meet these standards and who requests financial aid

will be required to meet with the Financial Aid Counselor to discuss plans for re-establishing financial aid eligibility. Unless there were extenuating circumstances, a student in this category should expect to enroll for at least 12 semester credits without financial aid and successfully pass all courses attempted with a minimum of a 2.00 GPA to be reconsidered for financial aid.

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

3. Appeals

Students who fail to meet these standards and lose eligibility for financial aid can appeal the decision. The appeal must be prepared in writing and must be accompanied by appropriate supporting documents. Appeals should be mailed to the College Financial Aid Office, CFAO Office Center, Annandale, VA 22003-3796. Appeals will be evaluated for mitigating circumstances. Reasons that may be acceptable for an appeal are: (1) serious illness or accident on the part of the student; (2) death, accident or serious illness in the immediate family; (3) change in academic program; and, (4) other extenuating circumstances. The reasonableness of the student's ability to improve to meet the appropriate standard for the certificate or degree program in which the student is enrolled will be taken into consideration.

Appeals will be approved, denied or approved for a probationary period not to exceed one academic year.

4. Regaining Eligibility

Students who fail to meet Satisfactory Academic Progress Standards and who choose to enroll without benefit of student financial aid may request a review of their academic record after any term in which they are enrolled without the receipt of financial aid to determine whether they have once 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 with their campus financial aid advisor to determine how to appeal any element of this policy or to determine how to regain eligibility for financial aid. If resolution cannot be achieved with the College Financial Aid Office, the NOVA student grievance procedures described in the NOVA *Student Handbook* may be followed.

Scholarships

Private citizens, businesses, non-profit 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 Web site 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 Web site under www.nvcc.edu/future-students/paying-for-college/financial-assistance/scholarships/index.html, or by entering "Scholarships" under the NOVA Web site search feature.

ACADEMIC 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. Your contribution is 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 class 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 non-traditional course format, is essential.

It is your responsibility to inform your instructor prior to an absence from class if this is requested by the instructor in the class syllabus. You are responsible for making up all course work missed during an absence. In the event of unexplained absences, your instructor may withdraw you administratively from the course.

If you do not attend at least one class meeting or participate in a distance learning class by the Last Day to Drop with a Tuition Refund (also known as the Census Date), your class registration will be administratively deleted. This means that there will be no record of the class or any letter grade on your transcript. Furthermore, your class load will be reduced by the course credits, and this may affect your full-time or part-time student status. Your tuition will not be refunded.

Credits

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

1. One hour per week of lecture (15 hours per semester plus an exam period).
2. Two hours per week of laboratory with one hour of out-of-class practice (45 hours per semester plus an exam period).
3. Three hours per week of laboratory with no out-of-class practice (45 hours per semester plus an exam period).
4. Courses offered in a non-traditional format require an equivalent amount of time.

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 a distance learning course. In a distance 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 distance 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 (1) must have satisfactorily completed more than 50% of the course requirements and (2) 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 (1) states the reason for assigning the grade; (2) specifies the work to be completed and indicates its percentage in relationship to the total work of the course; (3) specifies the date by which the work must be completed; and (4) identifies the default grade (B, C, D, F, P, R, or U) based upon course work already completed. Completion dates may not be set beyond the subsequent semester (to include summer term) 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 non-developmental courses. The “P/U” grading option may be used for an entire section of any course but not for a single individual within a course. Use of this grade must be approved by the division 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 fifteen credit hours for an approved experiential learning program such as PLACE (SDV 298).

R = Re-enroll – No grade point credit. The re-enroll “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 re-enroll 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 non-developmental courses being offered with a “P/U” grading option, as well as to developmental studies, ESL courses, non-credit 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 within a course.

W = Withdrawal – No grade point credit. A grade of “W” is awarded if you withdraw or are withdrawn from a course after the add/drop period but prior to the completion of 60 percent of the session, using the 125–047 form (rev. 1/06) Withdrawal Initiated by Student, or 125–031 (rev. 1/06) Withdrawal Initiated by Instructor. After the 60 percent point, you 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 division 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 “Withdrawal From a Course” on page 29.

X = Audit – No grade point credit. Audited courses do not count as a part of your course load. When you audit a course you may attend without taking the examination or receiving credit for the course. Permission of the instructor and the division dean is required to audit a course, no later than the Census Date for the course. See page 30, “Auditing a Course,” for more information.

Calculating Your 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 table below 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
TOTALS	15		10		30

If you think that a semester grade is in error, you may check by contacting the appropriate instructor through the instructional division by the end of the next full 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. For grades earned at the end of the spring semester, you will have through the end of the subsequent fall semester to correct the discrepancy.

Repeating a Course

Credit courses that are designated as repeatable for credit in the College Catalog or are identified as General Usage courses may be repeated for credit. Other than the general usage courses, the college may only designate 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 as repeatable for credit. You will be limited to 10 credits earned through multiple enrollments in the same course.

You are normally limited to two (2) enrollments in a credit course that is not designated as repeatable for credit or is not a General Usage course. Exceptions to this policy will be considered on a case-by-case basis when you submit a form 125-013, Course Repeat Request, to the academic division offering the course.

The following courses are exempted 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.

If you were enrolled during any semester or session from fall 1988 or thereafter, and you repeat a course, only the last 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. These criteria apply only to courses you take under the semester system (beginning

fall 1988) at NOVA. Graduates' curriculum and cumulative GPAs and honors designations at the time of graduation will remain unchanged. Certain courses where repeat enrollments cover new subject matter are not eligible for this policy. Examples are applied music and music ensemble, general usage courses, and others.

Academic Renewal

If you are a student who returns to the College after a separation of five (5) years or more, you may petition for academic renewal. The request must be in writing and submitted to a campus Student Services Center.

If you are found to be eligible for academic renewal, D and F grades earned prior to re-enrollment will be deleted from the cumulative and curriculum grade point average (GPA), subject to the following conditions:

1. Prior to petitioning for academic renewal you must demonstrate a renewed academic interest and effort by earning at least a 2.50 GPA in the first twelve (12) semester hours completed after re-enrollment.
2. All grades for credit courses received at the College will be a part of your official transcript.
3. You 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.
4. Total hours for graduation will be based on all course work taken at the College after readmission, as well as former course work for which a grade of C or better was earned, and credits accepted from other colleges or universities.
5. The academic renewal policy may be used only once and cannot be revoked after approval by the dean of students.

Developmental Courses Grading

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

If you are making satisfactory progress but have not completed all of the instructional objectives for a developmental course, you will be assigned an R (re-enroll) and you must re-enroll and pay the appropriate tuition to complete course objectives.

If you are not making satisfactory progress in a developmental course, you will be assigned a U (unsatisfactory). You should meet with your counselor for possible reevaluation of your 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.

Examinations

You 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. You have the right to review your final exam for one semester after the end of the term in which the final exam was taken.

Grade Information

Grades are obtained through NOVAConnect Web at www.nvcc.edu/novaconnect or NOVAConnect Telephone, 703-323-3770. From Prince William County, call 703-330-3770. Grade reports are not mailed.

Academic Honors

The College provides the following recognitions for academic excellence:

1. Presidential Scholars

Your name will be placed on the Presidential Scholars' list for any semester that your grade point average is 3.75 or higher. You must have completed at least nine (9) semester hours in the current semester (excluding developmental courses) and have earned a minimum of twenty (20) semester hours of credit at NOVA.

2. Dean's List

Your name will be placed on the Dean's List for any semester that your grade point average is 3.50 or higher. You must have completed at least six (6) semester hours in the current semester (excluding developmental courses) with no grade lower than C.

Academic excellence recognitions can be viewed online on your Unofficial Transcript through NOVAConnect Web at www.nvcc.edu/novaconnect.

Academic Standing

You are considered in good academic standing if you maintain a semester minimum GPA of 2.00, are eligible to re-enroll at the College, and are not on academic suspension or dismissal status.

When you are having academic difficulty, notification will appear on your unofficial transcript that can be viewed online through NOVAConnect Web at www.nvcc.edu/novaconnect. You will be given an appropriate period of time to show improvement. The College may determine that you are best served by being prevented from further enrollment for a period of time if you show no academic improvement.

If you are having academic difficulty, one of the following official indications will appear in your grade report on NOVAConnect Web:

1. Academic Warning

If you fail to maintain a minimum grade point average of 2.00 for any semester you will receive an academic warning.

2. Academic Probation

If you fail to maintain a minimum cumulative grade point average of 1.50, you will be placed on academic probation until your grade point average reaches 1.50 or better. The statement "Placed on Academic Probation" will be included on your permanent record. You will be ineligible for appointive or elective office in student organizations and usually will be required to carry less than a normal course load the following semester. While on academic probation you are required to consult a counselor. An average between 1.50 and 1.99 may not result in formal academic probation; nevertheless, a minimum of 2.00 in your curriculum is a prerequisite to the receipt of an associate degree. Part-time students will not be placed on academic probation until they have attempted 12 semester credit hours.

3. Academic Suspension

If you are on academic probation and fail to attain a minimum grade point average of 1.50 for the next semester, you will be placed on academic suspension. Academic suspension normally will be for one semester unless you reapply and are accepted for readmission to another curriculum of the College. The statement "Placed on Academic Suspension" will be included on your permanent record. If you are suspended, you may not be certified for graduation until you are readmitted to the college regardless of when requirements for graduation were completed.

If informed that you are on academic suspension, you may submit an appeal in writing to the chair of the Admissions Committee for reconsideration of your case. After termination of the suspension period, you must meet with a counselor or dean of students to be reinstated. Students will not be placed on suspension until 24 semester credit hours have been attempted.

Following your reinstatement after academic suspension, you must achieve a minimum 2.00 grade point average for the semester; you must enroll in a special section of an SDV 100 course or take part in a specially developed program. You must maintain at least a 1.50 grade point average in each subsequent semester of attendance. You remain on probation until your overall grade point average is raised to a minimum of 1.50.

4. Academic Dismissal

If you do not maintain at least a 2.00 grade point average for the semester of reinstatement to the College when on academic suspension, you will be academically dismissed. If you have been placed on academic suspension and achieve a 2.00 grade point average for the semester of your reinstatement, you must maintain at least a cumulative 1.50 grade point average in each subsequent semester of attendance. You will remain on probation until your cumulative grade point average is raised to a minimum of 1.50. Failure to attain a cumulative 1.50 grade point average in each subsequent semester until cumulative GPA reaches 1.50 will result in academic dismissal.

Academic dismissal normally is permanent unless, with good cause, you reapply and are accepted under special consideration for readmission by the Admissions Committee of the College. The statement “Academic Dismissal” will be placed on your permanent record.

5. College Procedures for Students Academically Suspended or Dismissed

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

- a. You are notified of your academic suspension/dismissal through both your grade report on NOVAConnect Web and a letter sent from the College that describes the suspension/dismissal policy and the steps available to you for appealing.
- b. A “hold” will be placed on your record so that you cannot register. The hold will indicate “academic suspension” or “academic dismissal” and is a part of your academic record.
- c. If you choose to appeal, you 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 your academic difficulties and describe remedies you propose to improve your academic performance.
- d. If you are requesting reinstatement to the College, you must meet with a counselor and/ or dean of students.
- e. The campus dean of students will make the reinstatement decision.
- f. The dean of students’ reinstatement decision may be appealed to the campus provost.

Academic Dishonesty

When College officials award credit, degrees, and certificates, they must assume the absolute integrity of the work you have done; therefore, it is important that you maintain the highest standard of honor in your 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 in the *Student 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:

1. 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.
2. Buying, selling, stealing, or soliciting any material purported to be the unreleased contents of a forthcoming examination, or the use of such material.
3. Substituting for another person during an examination or allowing another person to take your place.
4. Plagiarizing 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.
5. Accepting help from or giving help to another person to complete an assignment, unless the instructor has approved such collaboration in advance.
6. Knowingly furnishing false information to the College; forgery and alteration or use of College documents or instruments of identification with the intent to defraud.

Transfer Credit and Advanced Standing

NOVA has an advanced standing program that allows previous academic study, examination, or career experience to be evaluated for possible college credit. Only students who have declared a major may apply for advanced standing. Students must have completed at least one course at NOVA before an official transcript reflecting transfer credit will be issued. No more than 75% of a degree or certificate may be earned through advanced standing credits. Advanced standing credits that are to be used to meet the specific requirements of a curriculum must be approved by the division dean responsible for your curriculum. Consult the NOVA publication, *College Credit through Advanced Standing* at www.nvcc.edu/depts/academic/standing.htm, for a complete list of advanced standing opportunities.

If you wish to obtain advanced standing or transfer credit, only official transcripts or other documents specified in *College Credit through Advanced Standing* will be evaluated. An official transcript is one that has the seal of the institution and the signature of an official of that institution. An official transcript must be received in a sealed envelope

from the sending 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 Student Services Center at NOVA 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 or other advanced standing.

Transfer credit or advanced standing is available to students for educational experiences that fall into the following eight basic categories:

1. Transfer Credit from Other Colleges

Credit may be transferred only from colleges and universities that (a) are accredited by the Commission on Colleges or the Commission on Higher Education of the regional accreditation associations, such as the Southern Association of Colleges and Schools or (b) conform to the requirements published in the *Transfer of Credit Practices of Designated Educational Institutions* by the American Association of College Registrars and Admissions Officers with regard to credit accepted for courses that are appropriate to the reporting institution's baccalaureate programs.

Official transcripts from other institutions will be evaluated only after you have been admitted to the College and declared a major. All acceptable courses will be transferred as closely to the NOVA course equivalent as possible. If the course is in a discipline offered at the College but the course content is unlike any course at NOVA, elective credit may be granted. Credit is awarded only for courses with a grade of C or above.

You may take courses at other institutions while attending NOVA. If you wish to apply the credits to your program at NOVA, you should verify with the division dean responsible for your curriculum at NOVA that these courses will be accepted.

Technical courses that were completed more than 10 years ago are not normally accepted for credit toward a certificate or degree. The division dean responsible for your curriculum may accept courses that were completed more than ten years ago if you have worked in the field or otherwise demonstrated that you have maintained technical competence.

If you have completed an Associate of Arts (A.A.) or Associate of Science (A.S.) in a non-career/technical field or any higher degree at a regionally accredited U.S. institution of higher education, you will be considered to have met all general education requirements for degrees and certificates at NOVA. The exception to this policy

is that you must achieve the level of mathematics specified in a curriculum.

Any Virginia Community College System (VCCS) course in which you receive a grade of C or better (excluding general usage courses) will transfer as the same course at any other college in the VCCS. (This applies only if the College offers the course wanting to be transferred.)

Credit from international post-secondary institutions must first be evaluated by a private evaluation agency that follows guidelines of the American Association of Collegiate Registrars and Admissions Officers (AACRAO). You must send an official transcript to the agency and request an English translation with a course-by-course evaluation. The transcript evaluation must be sent directly from the evaluation agency to any campus Student Services Center. You must pay private evaluators for their fees for evaluation of your international transcript.

2. Credit for Military Service

Credit will be granted for military service school courses if the awarding of credit is recommended in the current edition of the American Council on Education's publication, *A Guide to the Evaluation of Educational Experiences in the Armed Services*, and approved by the division dean of your curriculum. The following information must be obtained to receive credit for military service:

- a. Full and correct title of course.
- b. Location of training.
- c. Length of course in weeks.
- d. Exact dates of attendance.
- e. Service that gave the course.

You must submit an official record and initiate the request for evaluation. Active duty servicemembers must submit a DD295 certified by the commanding officer and the education officer. This form must be mailed directly from the Education Office to NOVA. Veterans and reserve personnel must submit a certified copy of the DD214.* The veterans advisor on each campus can certify a copy of the original.

*Students who entered the Army on or after January 1984 must submit an AARTS (Army American Council on Education Registry Transcript System) transcript in lieu of a DD295 or DD214. Air Force personnel, both active and veteran, must submit a CCAF (Community College of the Air Force) transcript.

The military service courses and skills should be equivalent to NOVA courses and will be applied as the student's program determines. Military service credit in career/technical areas that is ten years old or older must be approved by appropriate division deans.

Credit may be granted for Army primary and secondary MOS's (military occupational specialty) at Skill Level 30-40 if current proficiency can be documented. Credit for MOS Skill Level 10 will only be granted for ratings prior to October 1991, however, credit may be granted for courses leading to this skill level after October 1991. After March 1995 skill levels 30 and 40 may yield credit for management skills but not technical skills. Skill level 20 is valid only from January 1990 to February 1995. No credit is awarded for duty MOS's. See also "Servicemembers Opportunity College" in the Student Development Services section of this catalog.

3. Credit for Training Courses

Transfer credit for training courses will be awarded only in accordance with the recommendations of the NOVA *College Credit through Advanced Standing* booklet or the American Council on Education's publication, *National Guide to Educational Credit for Training Programs*.

4. Credit for High School Courses

The College has articulated credit for a few high school career and technical programs. To be eligible for credit, you must have earned a B grade or better in the high school course. You must apply for articulated credit within two years of your high school graduation and successfully complete one course at the College before the credit will be reflected on your transcript. Please see the Web site at www.nvcc.edu/academics/additional-learning-opportunities/tech-prep/index.html for more information, or contact Ruthe Brown at rdbrown@nvcc.edu to determine eligibility.

You may also receive credit for high school courses through dual enrollment, Advanced Placement (AP), and International Baccalaureate (IB). Please refer to the "Dual Enrollment of Current High School Students and Home School Students" in this section for details. Please refer to the following section for information on AP and IB.

5. Credit by Examination

Advanced standing may be granted to students who have successfully completed examinations in any of the following programs:

a. Abitur.

Advanced standing will be granted to students successfully completing the Abitur, Certificate of University Maturity (Zeugnis Der Allgemeinen Hochschulreife). Credit will be granted for scores of 1-3 in Biology, Chemistry, French, German, History, Physics, and Social Studies. Test scores must be presented directly to NOVA.

b. Advanced Placement (AP).

AP examinations of the College Entrance Examination Board may be used for advanced placement. Specific college course credits will be granted for scores of three, four, or five on the Advanced Placement (AP) examinations. You must have official AP score reports forwarded from the Educational Testing Service (ETS) to NOVA for inclusion in your permanent record. Contact a Student Services Center for procedures required to initiate an evaluation of transfer credit.

c. Assessment by Local Examination (ABLE).

ABLE examinations may be constructed by NOVA where tests are not available from outside sources such as CLEP. The College grants specific course credit for acceptable performance on ABLE examinations for AIR 111, AIR 121, DRF elective, HLT 141, HRT 100, NAS 150, and SDV 100. Credits earned through ABLE exams cannot be used to fulfill residency requirements.

d. Cambridge, University of, Advanced Level Examinations.

Credit will be granted to students successfully completing the University of Cambridge Advanced Level Examinations General Certificate of Education. A grade of A or B is required for chemistry and a grade of C or better is required for all others. Test scores must be presented directly to NOVA.

e. College-Level Examination Program (CLEP).

CLEP examinations from the Educational Testing Service are approved for advanced standing. CLEP is a program of credit by examination that offers students the opportunity to earn college credit for knowledge acquired outside the conventional college classroom. To participate in the CLEP program, contact a campus counseling office.

f. International Baccalaureate (IB).

Students completing the Higher Level exams for International Baccalaureate may be granted advanced standing credit for a score of four or higher. You must have an official report of exam scores sent from the International Baccalaureate Organisation to the registrar at your campus of record.

g. DSST Program (formerly known as DANTES)

The DSST Program is offered by Prometric, which began updating exams in 2008. NOVA awards specific course credit for acceptable scores, as recommended by the American Council on Education. Several types of examinations are reported: end-of-course

examinations for correspondence, extension courses from regionally accredited colleges and universities, College-Level Tests of General Educational Development given prior to 1960, and General Examination of the College-Level Examination Program. Also, college course credit may be granted for tests administered by the United States Armed Forces Institutes (USAFI) prior to June 1, 1974 for scores at the 40th percentile and above. Scores at the 20th percentile and above are accepted for DANTES exams taken prior to September 1981. A complete listing of current and prior tests and recommended scores may be found at: www.GetCollegeCredit.com. Exams are administered at Ft. Belvoir and Quantico Marine Corps Base. See page 30 of NOVA's *College Credit through Advanced Standing*, January 2010.

To obtain results of USAFI courses and high school and college-level GEDs, follow these instructions:

- For military personnel tested through USAFI prior to July 1, 1974, write to DANTES Contractor Representative (Transcripts), P.O. Box 2879, Princeton, NJ 08541-2879.
- The scores of military personnel tested overseas after July 1, 1974, may be obtained from Educational Testing Services, Box CN6604, Princeton, NJ 08541-6604.
- Military personnel tested in the United States at official GED centers or by State Departments of Education must request transcripts directly from the State Department of Education or the official GED center concerned.

h. SAT II.

Advanced standing will be granted to students for successful completion of SAT II Subject exams in American History, French, German, Latin, Russian and Spanish. Test scores must be sent directly to NOVA.

6. Credit for Prior Learning (PLACE)

PLACE (Prior Learning Activity for Credit Evaluation) is an NOVA program for adults who have gained college level learning through work, volunteer activities, participation in civic and community assignments, travel, independent study, and similar "life experiences."

In order to convert these experiences into college credit, students must enroll in SDV 298, Seminar and Project PLACE Workshop. This course assists students in assembling a portfolio of evidence of their accomplishments. Completed portfolios are assessed by designated faculty who may recommend the awarding of credits.

Up to 15 semester credits in degree programs or 10 semester credits in certificate programs may be awarded through the portfolio process. In rare cases, more credits may be awarded at the instructor's discretion. Credits earned through PLACE cannot be used to fulfill residency requirements.

7. Credit for Physical Education

- a. For Military Service/Basic Training. The College may grant up to 3 credits of physical education/health credits to persons who have completed basic training based on the recommendation in the American Council on Education's (ACE) *Guide to the Evaluation of Educational Experiences in the Armed Services* regardless of the date of military experience. DD Form 214 is required for veterans and DD Form 295 is required for servicemembers on active duty. In cases of conflict, course requirements as stated in the NOVA College *Catalog* precede any other requirements (such as SOCAD agreements). Contact a Student Services Center for procedures required to initiate an evaluation of transfer credit.
- b. For Approved Police and Corrections Academies. If you completed a program of study at a state academy recognized by the Virginia Department of Criminal Justice Services, you may be granted all or part of the physical education credit required for a degree program. Contact a Student Services Center for procedures required to initiate an evaluation of transfer credit.
- c. Waiver for Active Duty Fire Fighters and Police. If you are currently employed by a fire department or police force and can document that you have completed physical fitness requirements for the job, you may have the two-credit physical education requirement waived. Such a waiver is at the discretion of the division dean responsible for your curriculum and will require that an additional two credits of general elective be completed to meet the total number of credits required for a degree. You must work with your faculty advisor, who may submit the online Substitution Request form, 125-032.

8. Waiver for Foreign Language Credit and Advanced Standing

If you have completed two years of a single foreign language in high school or your native language is not English, you have the following options:

- a. Request assessment by the College faculty if it is currently a language taught at NOVA. Such assessment could place you into levels above



the introductory course in the foreign language sequence. If you are granted advanced placement, additional general electives may have to be completed to meet the minimum credit requirements for the degree.

- b. Take a CLEP exam if prior education is in a language covered by CLEP. If you achieve a satisfactory score, you will be awarded credit for the foreign language that may be used toward completion of a degree.
- c. Request waiver of the foreign language requirement in A.A. degree, if you are proficient in a foreign language not offered by NOVA or through CLEP. Proficiency is generally indicated if you have 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. This waiver is accomplished through a Substitution Request (125-032) form generated by your faculty advisor.

9. Course Substitutions for Students with Documented Disabilities, Covered by the Americans with Disabilities Act of 1990 (ADA) and § 504 of the Rehabilitation Act of 1973, as Amended.

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.

**EXTENDED LEARNING INSTITUTE (ELI)
DISTANCE LEARNING COURSE REQUIREMENTS**

ELI offers most distance learning courses, but some distance learning courses are also available through individual NOVA campuses. Distance learning courses are designed to offer “anytime access” to higher education from the convenience of your 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.

NOVA distance learning courses can be accessed anywhere and anytime via the Internet and a Web browser, such as Netscape or Internet Explorer.

Some things to consider when choosing a distance learning course are the following:

- To be successful, students need strong reading and time-management skills, must be self-disciplined and motivated.
- Additional technology may be required, including watching video programs, using computer programs on CD-ROM, listening to audio programs, and/or using voice mail.
- Some online courses require in-person meetings or labs.
- Testing requirements and locations vary. Examinations in ELI distance 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.
- Some distance learning courses allow students the flexibility to work ahead on their own and complete a course early.

Be sure to check individual course descriptions for specific requirements or contact the individual instructor with questions.

Textbooks

Textbooks for Extended Learning Institute (ELI) distance courses might not be the same as those used on campus. They may be purchased at the Alexandria campus bookstore or ordered online (<http://nvcc-alexandria.bkstore.com>), by fax, or mail. Typically, books ordered from the bookstore by mail are shipped the same day.

Assignment Due Dates

Even though ELI distance courses are self-paced, you are required to submit some assignments by specific due dates. If you do not submit these assignments on time, you can be dropped from the course with a grade of W.

Services Available to ELI Students

All College and campus services are available to ELI students. Some restrictions may exist in the case of financial aid and veterans benefits. Some services, such as counseling, testing centers, tutoring, learning laboratories, and the Alexandria Campus bookstore, are closed during breaks at the end of each term. Faculty members may also be on vacation at these times, so there may be some delay in returning written work that has been submitted to ELI.

ELI Examinations

Each course has several exams that you must take in person at a campus testing center. These are proctored exams. To pass an ELI course, you must pass the proctored exams, regardless of how well you do on other course assignments. Exams may be taken any time the campus testing centers are

open, including some evenings and weekend times. For current hours, please call the testing center most convenient for you. If you cannot travel to a campus testing center, other arrangements for proctoring the exam can be made. For more information contact ELI.

Degree Programs

ELI offers students a way to take all—or most—of their courses toward an associate degree through distance-learning technologies. Degrees include Accounting, Business Administration, Business Management (including a specialization in Administrative Support Technology), General Studies, Information Technology, Liberal Arts and its specializations in International Studies and Speech Communication, Science and its specialization in Mathematics, and Social Sciences.

In addition, ELI offers all courses for Certificates in Bookkeeping and Small Business Management; and Career Studies Certificates in Accounting, Business Information Technology, Business Management Principles, Desktop Publishing, International Business, Leadership Development, Application Programming and Network Administration.

These degrees and certificates are administered by NOVA campus academic divisions. Distance Learning students have the option of taking required courses through ELI and can also apply ELI courses to other degrees. Prospective degree candidates should contact an ELI counselor, a campus counselor, or an academic advisor to plan their program of study.

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 your instructor or division dean for information about Study Abroad opportunities.

STUDENT SERVICES

Each campus provides a number of services designed to help with your education, career, and personal development. Counseling, testing, faculty advising, job counseling, student activities, and information about the College are explained in this section. Other services such as admissions and records are explained elsewhere in this catalog.

The NOVA *Student Handbook* provides additional information about the College. Student activities and organizations are described. Food services, bookstores, parking regulations, and the statement of student rights and responsibilities are included. Copies of the *Student Handbook* may be obtained in the Student Activities Office or online at www.nvcc.edu/resources/stuhandbook.

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. If you are taking courses through the Extended Learning Institute, you can use the student services offered at any campus.

STUDENT RIGHTS AND RESPONSIBILITIES

As a College student body member, there are certain rights that you may expect to enjoy as well as obligations that you accept by your 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 SERVICES

Counselors, located in the Student Services Center, are professionals who are available to assist you in your educational, career and life planning. They can help you to make effective decisions and to deal with problems that you 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 you explore and develop career goals and plan your education to help meet those goals. If you want to enroll in a degree or certificate curriculum, and if you did not indicate a choice of curriculum on your Application for Admission, it is suggested that you meet with a counselor 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 you leave NOVA. It may mean selecting the career/technical program best suited to your abilities. The counseling service on each campus provides a testing program to help you better understand your abilities, interests, skills, and values. Tests and inventories are administered and interpreted at a nominal charge to students.

During your first semester at NOVA, the counselor may refer you to a faculty advisor who will assist you in planning your second semester and the rest of your program.

Counseling services are open to you throughout your enrollment at the College. You are encouraged to continue to visit your counselor for whatever reason you may have. Any change of curriculum must be made through your counselor.

Counselors assist you with such information as financial aid, 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.

The Student Services Center on each campus also has information available about national testing programs, such as the Test of English as a Foreign Language (TOEFL) and the College Level Examination Program (CLEP).

For students requiring special services or accommodations, see the "Disability Services for Students" section for more information.

FACULTY ADVISING

Academic advising is a comprehensive program facilitated by counselors, 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.

For the first semester at the College, you should work with a counselor to select a program to meet your educational objectives. Once you have chosen a

major, you will then be referred to a faculty advisor or counselor who will assist you in planning the rest of your program for all subsequent terms.

Near the mid-point (30 credit hours) of your program, it is recommended that you meet with your advisor to discuss your progress toward graduation. All students are encouraged to seek information and assistance from faculty advisors in career planning in addition to curriculum planning. You can use the online Degree Progress Report at www.nvcc.edu/current-students/graduation/index.html to monitor your progress. You can apply for graduation at the same link by clicking on Application for Graduation.

Even if you are not enrolled in a specific curriculum major, you may seek assistance from faculty advisors and counselors to help select courses during enrollment.

CAREER DEVELOPMENT SERVICES

Each campus offers comprehensive career development services that include career planning and employment resources.

Career Planning Services

Career planning services help you explore, develop, and set goals related to your career and educational needs; make effective career decisions, and obtain employment. You may assess your interests, skills, preferences, values, and strengths; investigate the world of work through research, internships, cooperative education, and volunteer opportunities; and learn job searching tools and strategies such as writing resumes and interviewing successfully.

A variety of printed materials are available in the Student Services Center and in the Library of each



campus. Reference books and college catalogs providing information on colleges and professional schools are available. Other books and pamphlets describe the entrance requirements, working conditions and compensations of thousands of career and job opportunities. Specialized materials that help you learn more about how to plan for your education and personal development are also available.

Employment Resources

Employment resources refer to those resources that help students find jobs. Available in the Student Services Center on each campus, these resources include printed materials and electronic databases that provide students with community job listings and career information in both the public and private sectors, including salaries and employment outlook in each occupation. Area employers cooperate with the College to provide part-time and full-time employment for students. Internet resources allow further access to local, state, and national job openings.

STUDENT SERVICES— NEW STUDENT ORIENTATION

New Student Orientation sessions are offered at each campus before the Spring and Fall semesters. 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.

Students and parents learn how to utilize NOVA resources including degree and certificate programs, financial aid, transfer agreements, tutoring, and counseling. Students will also learn how to choose and register for classes online. Campus tours and a college resource fair will be available during all New Student Orientation sessions.

Students can register for a New Student Orientation session online at www.nvcc.edu > Current Students > Student Services > New Student Orientation.

STUDENT DEVELOPMENT COURSE

All curricular students, except those in career studies certificate programs shall participate in a one-credit student development course designed to help you succeed in college, either SDV 100, College Success Skills, or SDV 101, Orientation to (specify 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. The Extended Learning Institute (ELI) also has SDV courses available for those who cannot attend a campus-based section.

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 an Associate Degree or Bachelor's Degree from a regionally accredited institution. Students still must complete the required number of credits for their degree.

COMPUTER INFORMATION SERVICES

As a student at Northern Virginia Community College, you may have access to and use of information technology applications, services, and resources as part of your enrollment. As an enrolled student, you are provided with a LAN (Local Area Network) account to access campus computer workstations and your web folder, and an official VCCS account (NOVA Student ID) to access your student e-mail account, the Student Information System (NOVAConnect), and Blackboard courses. NOVAConnect allows you to enroll and pay for courses using the Web or telephone. You are responsible for checking your e-mail regularly for College announcements on student services or messages from instructors and classmates. In order to insure your privacy, the College will use only your official College e-mail address. You can forward messages to another e-mail address if you choose.

The Virginia Community College System has established a student ethics agreement for the use of college computer information technology. Your use of this technology is limited to your role as a student at the College, and there are certain security procedures that you are expected to observe. The "Information Technology Student/Patron Ethics Agreement" is printed in the *Student Handbook* and posted in computer laboratories, libraries, and other areas where access to college computer services is available. You may obtain a copy the Computer Ethics Guideline at <http://es.vccs.edu/pdf/VccsComputerEthicsGuidelines.pdf>.

DISABILITY SERVICES FOR STUDENTS

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. If you require any special accommodation or service, contact the NOVA Counselor for Disability Support Services at the campus of your choice at least four weeks prior to the beginning of classes. To qualify for accommodations, you 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 Affirmative Action/Minority and Legal Affairs.

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 you in the determination of eligibility for accommodations and in academic counseling. NOVA assumes that if you are a student with a disability, you 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 Web site: www.nvcc.edu/current-students/disability-services/index.html.

HEALTH SERVICES

Since your health is an important factor in your success as a student, the College encourages wellness through a program of information and services. Throughout the academic year, opportunities are provided to attend presentations, workshops, and discussions both on campus and in the community on health and wellness. Because the College's faculty, staff, and student community is diverse, special presentations of interest to women, older students, students with disabilities, etc., are given special focus.

You are encouraged to be prepared for the need of medical care by having appropriate accident and sickness insurance. As a resource, the Student Services Center on each campus provides a list

of companies that offer student health insurance programs. Though there is no clinic on campus, basic first aid is available through the Campus Police. Each campus is close to emergency medical services and clinics and hospitals are readily available.

Health and wellness opportunities are available through fitness facilities on campus and intramural activities. Each degree curriculum requires a minimum of one credit of physical education.

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 College Safety Report that details its safety programs and crime statistics. The report covers the incidence of crimes occurring on College property, and details the College's policies on campus security, alcohol and drug use, crime prevention, the reporting of crimes, sexual assault, and other matters.

Copies of the College Safety Report are available from the Campus Police and Public Safety Offices and Student Services Centers. It can also be found on the College Web page at www.nvcc.edu/depts/CollegeSafety/.

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 printed in the *Student Handbook*, which is also available on the College Web site.

STUDENT ACTIVITIES

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 Activities on each respective campus.

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 your health and your future. If you or someone you know needs help, contact the Counseling Center at any of the campuses for information about referral to community agencies.

The illegal possession, use, or distribution of controlled substances may result in legal sanctions including imprisonment and fines. Such conduct by students on campus can also result in the College taking disciplinary action as stated in the *Student Handbook*.

VOTER REGISTRATION

Northern Virginia Community College encourages all eligible students to register to vote. Voter registration materials can be obtained at each campus Business Office, Counseling and Student Services Centers, and Library.

ROTC (ARMY/AIR FORCE)

The U.S. Army Reserve Officers' Training Corps (ROTC) is an elective program that offers qualified students the opportunity to earn a commission as an officer in the active U.S. Army, Army National Guard, or U.S. Army Reserve while pursuing a baccalaureate degree as a full-time student. A complete four-year ROTC program is offered at George Mason University, and is divided into two phases: the basic course and the advanced course. The basic course, consisting of the first two years of instruction, is open to all NOVA students and is taught at the NOVA Annandale campus. The program emphasizes student learning and participation in applied leadership, leadership theory and assessment, decision making, management skills, time management, map reading, land navigation, first aid, physical fitness and health, writing, briefings, and basic military knowledge and skills. Once students have completed the basic course instruction, they are eligible to enroll in the advanced course of ROTC upon transfer to a four-year university or college. For more information, contact the George Mason director of ROTC at 703-993-2706.

A similar agreement among the Air Force ROTC, NOVA and the University of Maryland has been established to make the Air Force ROTC General Military Course and/or Professional Officer Course available to qualified NOVA students who desire to earn appointments as commissioned officers in the United States Air Force. For more information, contact the University of Maryland director of ROTC at 301-314-3242.

SERVICEMEMBERS OPPORTUNITY COLLEGE (SOC)

NOVA has been designated as an institutional member of Servicemembers Opportunity Colleges (SOC), a group of over 1,700 colleges and universities providing voluntary postsecondary education to members of the military throughout the world. As a 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 crediting 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 over 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 for the following:

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

CONCURRENT ADMISSIONS PROGRAM

This is a joint program of Army Recruiting Command, Army National Guard, and participating SOC colleges. Eligible enlistees are admitted to college concurrent with enlistment in the Army or National Guard. Soldiers may then defer enrollment in class for up

to two years after discharge or after active duty for training in the National Guard or Army Reserve.

Upon enrollment in college, the soldier may be awarded appropriate credit for military courses and occupational experience.

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.

VETERANS BENEFITS

All 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.

If you are a veteran or a veteran's dependent, you may be eligible for educational benefits from the Department of Veterans Affairs. You should contact your campus Veterans Advisor each semester to complete the necessary forms to establish and maintain your eligibility for benefits. Full-time educational benefits are available to you if you are 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 the Extended Learning Institute (ELI) and accelerated courses are also measured differently. See a campus Veterans Advisor for details.

You may have earned credits at another college, vocational school, or technical school. Credits may have also been earned by taking CLEP, ABLE, DANTEs, or USAFI exams. You must insure that an official transcript is sent to the Student Services Center during your first semester of enrollment. You must have your military training evaluated along with your transcripts from non-military schools. DD Form 214 (Certificate of Release or Discharge from Active Duty) originals or copy #4 should be copied by Student Services for evaluation and returned to you. Generally, repeating courses that have been previously passed will not be certified to the Department of Veterans Affairs for payment.

If you receive educational benefits, you must report your enrollment each semester to your Veterans Advisor. The information will then be certified and reported to the Department of Veterans Affairs

Regional Office. Any changes to your 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 your eligibility to receive benefits from the Department of Veterans Affairs. Excessive absences may result in your 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, you must maintain satisfactory academic progress in accordance with Northern Virginia Community College standards. The following standards must be met:

1. You will be reported to the Department of Veterans Affairs as making unsatisfactory progress if your cumulative GPA falls below the required level based on the following schedule:

Regular Credits Attempted (Grades A, B, C, D, F)	Minimum Cumulative GPA Requirement
13–23 credits	1.50
24–47 credits	1.75
48 or more credits	2.00

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

2. When your academic record does not meet the above standards, you will be notified in writing by the veterans advisor that your next term will be "probationary." You will be required to meet with a counselor or faculty advisor to develop a written plan to indicate how you will successfully complete your educational objective and how you will satisfy the GPA requirement for satisfactory progress toward graduation. This plan will be kept on file in the Veterans Office.
3. If you do not meet the minimum cumulative GPA requirement or do not earn a minimum GPA of 2.00 for your probationary term, you will be reported to the Department of Veterans Affairs as making unsatisfactory progress. You may be certified on a retroactive basis for the following term if you receive a minimum GPA of 2.00 for that semester. When your cumulative GPA meets



- or exceeds the minimum requirement, educational benefits will be restored on a regular basis.
4. If you are subject to academic suspension, you must be reported to the Department of Veterans Affairs as making unsatisfactory progress. Benefits will not be resumed until you are making satisfactory progress.
 5. Questions regarding this policy should be addressed to the campus veterans advisor.

VIRGINIA ARMY NATIONAL GUARD EDUCATIONAL BENEFITS

The Virginia Army National Guard (VaARNG) provides in-state tuition assistance and information on eligibility for federal educational benefits. You should contact your VaARNG Education Officer or the campus Veterans Office for details.

VIRGINIA WAR ORPHANS EDUCATION PROGRAM

The Virginia War Orphans Education Program provides educational assistance, for a maximum of 48 months of tuition and fees, for children of certain Virginians who served in the Armed Forces of the United States. To be eligible for

assistance under this program, an applicant must meet eligibility requirements. Prospective students may obtain an application by contacting the Virginia Department of Veterans Affairs, 270 Franklin Road, S.W., Room 1012, Poff Federal Building, Roanoke, Virginia, 24011-2215. The telephone number is 540-857-7104.

TUITION BENEFITS FOR SURVIVORS OF DECEASED PUBLIC SAFETY OFFICERS OF VIRGINIA

The Code of Virginia (Sec. 23-7.1:01) provides tuition benefits for certain children and spouses of deceased public safety officers. You may be eligible for free tuition at the College if your parent or spouse was killed in the line of duty while employed in Virginia as a Virginia law enforcement officer; fire fighter; 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, you may contact any campus Student Services Center.

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"> Procedures for inspecting and reviewing of student's education records. Procedures for amending student records. Procedures for disclosing student's educational records. 	<ul style="list-style-type: none"> <i>Catalog</i>: www.nvcc.edu/curcatalog/admin/admissn.htm <i>Student Handbook</i>: www.nvcc.edu/resources/stuhandbook <p>Printed copies of the <i>Catalog</i> and <i>Student Handbook</i> are available at each campus Student Services Center.</p>
<ul style="list-style-type: none"> Procedures for filing a complaint to the U.S. Department of Education. 	<ul style="list-style-type: none"> See U.S. Dept. of Education, Office for Civil Rights Web site at: www2.ed.gov/about/offices/list/ocr/docs/howto.html and Office of Inspector General Web site at: www2.ed.gov/about/offices/list/oig/hotline.html?src=ct
<ul style="list-style-type: none"> A list of all available federal, state, local, private, and institutional financial need-based and non-need-based assistance programs. The application procedures, eligibility criteria, method and frequency of disbursements, terms of loans, general conditions, and exit counseling information for these assistance programs. 	<ul style="list-style-type: none"> Financial Aid: www.nvcc.edu/current-students/financial-assistance/index.html <p>Printed copies of the <i>Student Financial Aid Services Brochure</i> and other pamphlets are available at each campus Financial Aid Information Services office and the College Financial Aid office.</p>
<ul style="list-style-type: none"> Cost of attending College. Refund policy. Grant or loan return or repayment procedures for withdrawn students. Requirements for officially withdrawing from the College. 	<ul style="list-style-type: none"> <i>Schedule of Classes</i>: www.nvcc.edu/curschedule <i>Catalog</i>: www.nvcc.edu/curcatalog/admin/admissn.htm <i>Student Handbook</i>: www.nvcc.edu/resources/stuhandbook Financial Aid Web site: www.nvcc.edu/current-students/financial-assistance/index.htm <p>Printed copies of the <i>Schedule of Classes</i>, <i>Catalog</i>, and <i>Student Handbook</i> are available at each campus Student Services Center. The <i>Student Financial Aid Services Brochure</i> is available online at the Financial Aid Web site and at each campus Financial Aid Information Services and the College Financial Aid Office.</p>
<ul style="list-style-type: none"> Academic programs information. 	<ul style="list-style-type: none"> <i>Catalog</i>: www.nvcc.edu/curcatalog/programs <i>Schedule of Classes</i>: www.nvcc.edu/curschedule <p>Printed copies of the <i>Catalog</i> and <i>Schedule of Classes</i> are available at each campus Student Services Center.</p>
<ul style="list-style-type: none"> Organizations that accredit, license, or approve the College and its programs. Procedures for reviewing school's accreditation, licensing, or approval documentation. 	<ul style="list-style-type: none"> <i>Catalog</i>: www.nvcc.edu/curcatalog <p>A printed copy of the <i>Catalog</i> is available at each campus Student Services Center.</p>
<ul style="list-style-type: none"> Description of any special services and facilities for disabled students. 	<ul style="list-style-type: none"> <i>Catalog</i>: www.nvcc.edu/curcatalog <i>Student Handbook</i>: www.nvcc.edu/resources/stuhandbook <p>Printed copies of the <i>Catalog</i> and <i>Student Handbook</i> are available at each campus Student Services Center.</p>

Consumer Information	Where Available
<ul style="list-style-type: none"> Title and availability of NOVA staff responsible for dissemination of institutional and financial assistance disclosure information and how to contact them. 	<ul style="list-style-type: none"> <i>Catalog</i>: www.nvcc.edu/curcatalog <i>Student Handbook</i>: www.nvcc.edu/resources/stuhandbook <i>Schedule of Classes</i>: www.nvcc.edu/curschedule Financial Aid: www.nvcc.edu/future-students/paying-for-college/financial-aid-staff/index.html <p>Printed copies of the <i>Catalog</i>, <i>Student Handbook</i>, and <i>Schedule of Classes</i> are available at each campus Student Services Center. The <i>Student Financial Aid Services Brochure</i> is available at each campus Financial Aid Information Services and the College Financial Aid Office.</p>
<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> <i>Catalog</i>: www.nvcc.edu/curcatalog/admin/academic.htm If a NOVA credit course offers special studies abroad, it is treated as a regular credited course. <p>A printed copy of the <i>Catalog</i> is available at each campus Student Services Center.</p>
<ul style="list-style-type: none"> 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. Transfer-out rate for above described students. 	<ul style="list-style-type: none"> Office of Institutional Research and Analysis (OIR) Reports: www.nvcc.edu/oir/oirpubs/gradinfo.htm Virginia Community College System (VCCS) Institutional Research Information: http://myfuture.vccs.edu/Research
<ul style="list-style-type: none"> Campus security report. The <i>College Safety 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. 	<ul style="list-style-type: none"> <i>College Safety Report</i>: www.nvcc.edu/current-students/police/college-safety-report/index.html <p>A printed copy of the <i>College Safety Report</i> is available upon request from any Campus Police Office.</p>

INSTRUCTIONAL PROGRAMS

This section of the College Catalog describes the types of programs offered at NOVA.

TYPES OF DEGREES AND CERTIFICATES

Northern Virginia Community College offers two-year associate degrees, one-year certificates, and short career studies certificates. The requirements for these awards for completion of curricula 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, 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 non-degree curriculum consisting of a minimum of 30 semester credit hours in a career area; a minimum of 15% of a certificate's credit hour requirement shall be in general education including one three-credit-hour English class. A career studies certificate is awarded for the completion of an approved non-degree 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 for the completion of a Bachelor of Arts (B.A.) degree.

Associate of Science Degree (A.S.)

Awarded for the completion of two-year curricula in a variety of pre-professional programs. The A.S. degree is designed for those who plan to transfer to a four-year, degree-granting institution for the completion of a Bachelor of Science (B.S.) degree.

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. This varies by institution. 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 four-year colleges as part of a special program.

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

Awarded for completion of two-year curricula designed to prepare the student for employment in a technical field immediately following graduation. In some A.A.S. degree programs one or more summer terms may be required. These curricula are not designed for transfer to a four-year college or university. However, in some limited cases, career courses may transfer, and there may be articulation arrangements with four-year colleges as part of a special program.

Certificate (C.)

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

Most certificates prepare the student 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 are not designed for transfer to a four-year college or university. However, in some limited cases, career courses may transfer, and there may be articulation arrangements with four-year colleges as part of a special program.

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 certificate and degree programs that require similar courses.

General Education Certificate (G.E.C.)

Awarded to recognize a milestone of achievement for students pursuing an Associate of Science (A.S.) or Associate of Arts (A.A.) degree, the General Education certificate requires completion of 38 credits of transferable general education courses. The curriculum provides a solid foundation in the VCCS and NOVA general education core competency areas.

The General Education certificate is awarded to students placed in A.A. and A.S. degree programs upon completion of the following: ENG 111 College Composition I; ENG 112 College Composition II or ENG 125 Introduction to Literature; MTH 151 Mathematics for the Liberal Arts I or a higher-level mathematics course; PED 116 Lifetime Fitness & Wellness and one other credit of PED, HLT, or RPK; two humanities/fine arts electives (for a total of 6 credits); two social/behavioral science electives (for a total of 6 credits); two physical and life science electives (for a total of 8 credits); and SDV 100 College Success Skills or SDV 101 Orientation to a given discipline.

The oral communication elective may be chosen from CST 100, 110, 115, 127, 226, or 229. The humanities/fine arts elective may be selected from the humanities/fine arts courses listed in this catalog under General Education Electives. The social science electives may be selected from the social/behavioral sciences courses listed in this catalog under General Education Electives. The physical and life science electives may be selected from biology, chemistry, physics, environmental science, geology, or natural science courses with a lab component, as listed in this catalog under General Education Electives.

DEGREE REQUIREMENTS

Degrees	A.A.	A.S.	A.A.A.	A.A.S.
¹ Written & Oral Communication	9	9	6	3
² Humanities/Fine Arts	6	6	3	3
³ Foreign Language	6	–	–	–
⁴ Social/Behavioral Sciences	9	9 ⁴	3	3
⁵ Mathematics	6	6	0–3	0–3
⁶ Physical and Life Science	8	8		
⁷ SDV Elective	1	1	1	1
⁸ Physical Education/Wellness	1	1	1	1
⁹ Personal Development Elective	1	1	1	–
Minimum Total General Education Requirements	47	41	18	15**
¹⁰ Elective & Major Area Requirements	13–19	19–22	47–51	50–54
¹¹ Total Credits	60–63	60–63	65–69	65–69

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

**Although the minimum number of credits required for each General Education component only adds up to 14 for AAS programs, to meet SACS and VCCS requirements, any given degree program MUST include at least 15 credits in general education courses; the additional credit may be in any of the general education areas.

¹Written and Oral Communication.

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

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

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

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

²Humanities/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), 200-level foreign languages, and the history (HIS) courses specified under Humanities/Fine Arts Electives on page 56.

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

³Foreign Language.

If you are in an A.A. program, you 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.

⁴Social/Behavioral Sciences.

The social/behavioral science requirement may be met by selected courses in economics (ECO), geography (GEO), history (HIS), political science (PLS), psychology (PSY), and sociology (SOC). Where the social science is listed as an elective in a curriculum, you may select from courses in any of these areas.

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.

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

⁵Mathematics.

A.A. and A.S.: A minimum of 6 credits in mathematics at or above MTH 151 is required. The General Studies A.S. degree requires only 3 credits of mathematics.

A.A.A. and A.A.S.: A minimum of 3 credits must be earned in mathematics/natural sciences. In degrees that have a science requirement, the mathematics course may be fewer than 3 credits.

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

⁶Physical and Life Sciences.

A.A. and A.S. degrees require 8 credits in courses in the 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 below for a list of approved general education courses.

⁷SDV Elective.

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

⁸Physical Education/Wellness.

The physical education/wellness requirement may be met by PED 116 Lifetime Fitness & Wellness or HLT 110 Concepts of Personal & Community Health.

⁹Personal Development Elective.

The personal development elective may be met by a course in HLT, PED, RPK (activity courses only), or SDV. The course should be selected based upon the student's goals. Note that the 2-credit version of PED 116 Lifetime Fitness & Wellness will meet both the physical education/wellness requirement AND the personal development elective.

¹⁰General Elective and Major Area Requirements.

Not all courses will transfer or meet the requirements of a four-year degree. You should see a counselor or faculty advisor prior to registering for general electives. If your primary goal is to transfer to a four-year degree program, you should become familiar with the requirements of your intended transfer institution and select electives that meet that institution's requirements.

¹¹Total Credits.

The total credits in A.S. degrees are between 60 and 63 credits, with the exception of Engineering, which may have as many as 72 credits.

The total credits in A.A.S. degrees are between 65 and 69 credits, with the exception of the programs in Allied Health and Veterinary Technology that may have 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 elective courses.

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

Humanities/Fine Arts Electives

ARC 200	History of Architecture
ARC 201	History of Modern Architecture
ART 100	Art Appreciation
ART 101-102	History and Appreciation of Art
ART 103-104	History of Far Eastern Art
ART 105	Art in World Culture
ART 106	History of Modern Art
ART 150	History of Film and Animation
ART 211-212	History of American Art
ART 213-214	Italian Art
ART 250	History of Design
ASL 125	The History & Culture of the Deaf Community

ASL 201-202	American Sign Language III-IV
CST 130	Introduction to the Theatre
CST 141	Theatre Appreciation I
CST 151-152	Film Appreciation I-II
CST 231-232	History of the Theatre I-II
ENG	Any 200-level literature course
Foreign Languages	All 200-level courses
(ASL 201 & 202 may be used to meet the foreign language requirement at VCCS colleges, but may not transfer as foreign language to other institutions.)	
HIS 101-102	History of Western Civilization
HIS 111-112	History of World Civilization
HIS 187	Interpreting Material Culture
HIS 243	History of the Ancient World
HIS 255	History of Chinese Culture and Institutions
HIS 256	History of Japanese Culture and Institutions
HIS 261	Topics in Cultural Ethnicity
HIS 262	United States History in Film
(The above HIS courses can be considered humanities at VCCS colleges but may not transfer as humanities to other institutions.)	
HUM	All courses
MUS 121-122	Music Appreciation
MUS 221-222	History of Music
MUS 225	The History of Jazz
PHI	All courses
PHT 110	History of Photography
REL	All courses
Social/Behavioral Sciences	
ECO 110	Consumer Economics
ECO 115	Understanding Our Environment: An Economic Introduction
ECO 120	Survey of Economics
ECO 201-202	Principles of Macro and Micro Economics
ECO 210	International Economics
GEO 200	Introduction to Physical Geography
GEO 210	Introduction to Cultural Geography
GEO 220	World Regional Geography
GEO 230	Political Geography
HIS 101-102	History of Western Civilization
HIS 111-112	History of World Civilization
HIS 121-122	United States History I-II
HIS 125	History of the American Indian
HIS 126	Women in World History
HIS 127	Women in American History
HIS 135	History of the Contemporary World
HIS 141-142	Afro-American History I-II
HIS 187	Interpreting Material Culture
HIS 203	History of African Civilization
HIS 211	History of England

HIS 225-226	Topics in European History
HIS 231-232	History of Latin American Civilizations I-II
HIS 241-242	History of Russia I-II
HIS 243	History of the Ancient World
HIS 251-252	History of Middle East Civilization I-II
HIS 253-254**	History of Asian Civilizations
HIS 255	History of Chinese Culture and Institutions
HIS 256	History of Japanese Culture and Institutions
HIS 261	Topics in Cultural Ethnicity
HIS 262	United States History in Film
PLS	All courses
PSY	All courses
SOC	All courses
SSC 115	Introduction to Global Affairs

**Additional HIS courses may be approved by the faculty advisor.

Physical and Life Sciences/Mathematics

BIO 101-102*	General Biology I-II
BIO 107	Biology of the Environment
BIO 110	General Botany
BIO 120	General Zoology
BIO 141-142	Anatomy & Physiology I-II
CHM 101-102**	General Chemistry I-II
CHM 111-112	College Chemistry I-II
CHM 121-122	Health Sciences 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
GOL 206	Paleontology
GOL 225	Environmental Geology
NAS 101-102***	Natural Sciences I-II
NAS 125	Meteorology
NAS 130	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 151-152	Math for Liberal Arts I-II
MTH 157	Elementary Statistics
MTH 163-164	PreCalculus I-II
MTH 166	PreCalculus with Trigonometry
MTH 173-174	Calculus with Analytic Geometry I-II
MTH 181-182	Finite Mathematics
MTH 241-242	Statistics I-II
MTH 271-272	Applied Calculus

*Additional biology (BIO) courses may be approved by a faculty advisor.

**Additional chemistry (CHM) courses may be approved by a faculty advisor.

***Additional natural science (NAS) courses may be approved by a faculty advisor.

GRADUATION REQUIREMENTS

Associate Degree Requirements

To be eligible for graduation with an associate degree (A.A.A., A.A.S., A.A. or A.S.) from the College, you must:

1. Have been admitted to a curriculum (declared a major).
2. Have fulfilled all of the course work and credit hour requirements of the curriculum as outlined in the College *Catalog*. The catalog to be used to determine graduation requirements is the one in effect at the time of your admission to a curriculum from which you are graduating, or any subsequent catalog of your choice from an academic year in which you attended NOVA. The catalog to be used in certifying your graduation shall have been in effect no more than seven years prior to the semester of graduation.
3. Have been recommended for graduation by the appropriate instructional authority in your curriculum.
4. Have taken at least 25% of the credit required in the curriculum at NOVA.
5. Have completed the general education requirements for an associate degree.
6. Have earned a grade point average of at least 2.00 in courses attempted that are applicable toward graduation in the curriculum.
7. Have applied for graduation online on or before the dates published for each semester in the *Schedule of Classes* (which is not required in the case of the General Education Certificate).
8. Have resolved all financial obligations to the College and returned all materials, including library books.

Multiple Degrees

If you wish to earn a degree, diploma, certificate, or career studies certificate in addition to any other degree, diploma, certificate, or career studies certificate, you must (1) complete all requirements of both programs, and (2) the awards must differ from one another by at least 25% of the credits.

Certificate Requirements

To be eligible for graduation with a certificate or a career studies certificate from the College you must:

1. Have been admitted (declared a major) to a curriculum.
2. Have fulfilled all of the course requirements of the curriculum as outlined in the College *Catalog*. This includes achieving a passing grade in each course in the curriculum. The catalog to be used to determine graduation requirements is the one in effect at the time of your admission to a curriculum from which you are graduating, or

any subsequent catalog of your choice from an academic year in which you attended NOVA. The catalog to be used in certifying your graduation shall have been in effect no more than seven years prior to the semester of your graduation.

3. Have been recommended for graduation by the appropriate authority in the curriculum.
4. Have completed at least 25% of the credits for the certificate at NOVA.
5. Have earned a grade point average of at least 2.00 in all courses attempted that are applicable toward graduation in the curriculum.
6. Have applied for graduation online on or before the dates published in the Schedule of Classes for each semester. No application is necessary for the General Education Certificate.
7. Have resolved all financial obligations to the College and returned all materials, including library books.
8. Have completed an SDV course if you are enrolled in a certificate or career studies certificate of more than 15 credits.

Certificate of Completion

If you successfully complete a program of instruction that does not lead to a certificate or an associate degree, you may be awarded a Certificate of Completion. These are also given for non-credit courses at the College.

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% of the credit hours in their certificate program are eligible for graduation honors. You must apply online for graduation to be eligible for graduation honors. Graduation honors are determined by your cumulative grade point average at the completion of the semester for which you are 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 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, if you are a prospective or

enrolled student who would like to know more about the enrollments and completion rates for a particular curriculum, the College may be able to provide such information to you. You may obtain much of this information at the College Office of Institutional Research's Web site at <http://www.nvcc.edu/about-nova/directories-offices/administrative-offices/oir/index.html>.

Issuing of Diplomas

Diplomas are issued at the end of each term after final verification of grades and completion of requirements. Your diploma will be mailed to the address you entered in your online graduation application. You will receive only one diploma for each degree or certificate you earn. If you complete additional course work after the awarding of a degree, it will affect the cumulative and plan grade point averages (GPAs), but not the GPAs entered when the degree was awarded. The updated grades and GPAs will be reflected on your 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. Students who have completed *only* the General Education Certificate are not eligible to participate in the commencement ceremony. For Spring 2011 commencement this means students who complete program requirements in Spring 2011 or any prior semester may participate. If you are a spring semester graduate, participation in the commencement ceremony does not guarantee that your degree will be awarded. You still must successfully complete the program requirements to graduate from NOVA.

TRANSFER INFORMATION

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 faculty advisors in transfer planning and for designing an appropriate NOVA program of study.

Transferring to Other Colleges

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 Web site, www.nvcc.edu/current-students/transfer/index.html, is a good first stop in planning your transfer from NOVA to a four-year university. Articulation and Guaranteed Admission Agreements, four-year school transfer guides and admission information, campus transfer events, plus more, are all linked on this site. After viewing the site, a follow-up visit with your campus transfer counselor to discuss your plans is recommended.

Only courses with a grade of C or better are accepted for transfer even if the student has an A.S. or A.A. 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.

Northern Virginia Community College offers the following specific programs of study leading to the Associate of Arts or Associate of Science degrees:

Associate of Arts Degrees

¹ Fine Arts

² Liberal Arts

- Art History Specialization
- International Studies Specialization
- Psychology Specialization
- Speech Communication Specialization

³ Music

Associate of Science Degrees

⁴ Business Administration

⁵ Computer Science

⁶ Engineering

- Electrical Engineering Specialization

⁷ General Studies

- Recreation, Parks & Leisure Studies Specialization

⁸ Information Technology

⁹ Science

- Mathematics Specialization

¹⁰ Social Sciences

- Deaf Studies Specialization
- Political Science Specialization
- Psychology Specialization
- Teacher Education Specialization

¹ Fine Arts

- A foundation program for the Baccalaureate of Arts Degree in Fine Arts or for transfer to a professional school for the arts.

² Liberal Arts

- A foundation program for Baccalaureate of Arts Degrees for any other humanities or social science program not listed as a specialization, e.g., Anthropology, Economics, Education, English, Foreign Languages, Geography, History, Political Science, Sociology, etc.

³ Music

- A foundation program for Baccalaureate of Arts Degree in Music.

⁴ Business Administration

- A foundation program for Baccalaureate Degrees in Business with

- majors in Accounting, Business Management, Finance, Decision Science and Management Information Systems, Marketing, etc.

⁵ Computer Science

- A foundation program for Baccalaureate Degree in Computer Science.

⁶ Engineering

- A foundation program for Baccalaureate Degrees in Engineering with majors in Aeronautical, Chemical, Civil, Mechanical, etc.

⁷ General Studies

- A foundation program that can be tailored to meet the requirements of a specific Baccalaureate Degree at a specific four-year institution.

⁸ Information Technology

- A foundation program for Baccalaureate of Science in Information Technology.

⁹ Science

- A foundation program for Baccalaureate Degrees in Science with majors in Agriculture, Biology, Chemistry, Forestry, Geology, Home Economics, Oceanography, Physics, etc.

¹⁰ Social Sciences

- A foundation program for Baccalaureate of Science Degrees in the Social Sciences.

The foundation courses are also available (through the Associate of Arts or Associate of Science degrees) for advanced professional degree programs in many fields, including:

- Law
- Dentistry
- Medicine
- Physical Therapy
- Pharmacy
- Optometry
- Occupational Therapy
- Veterinary Medicine

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.

Transfer Articulation Agreements

NOVA has formal 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 Web site at www.nvcc.edu/current-students/transfer/index.html.

HONORS

Honors courses enable qualified, highly motivated students to enrich their study through challenging honors course work. Honors courses differ from regular sections in that your goals and assignments are more centered on your evolving interests. You will be encouraged to think independently and critically,

to participate actively in discussions and to learn in collaboration with your fellow students. Honors courses stimulate broader and deeper consideration of the subject matter and encourage the exploration of the interrelationships of ideas across disciplines. Each honors course will have a special transcript identifier. Universities and employers favor students who seek the greater challenge offered through honors courses.

The approach to honors courses may vary from campus to campus. At some campuses, special sections are designated as honors courses. Some campuses offer specified combinations of honors courses scheduled and designed in coordination with one another for the purpose of interdisciplinary study. "Honors options," in which honors students take part in a regular course section while also completing a special honors component of the course, are also offered. Honors contract courses, in which the student and instructor agree to a particular independent study, are also offered. Honors faculty advisors are available at each campus to aid you with course selection. The Student Services Center can provide you with further information.

Honors Program Admission Requirements

You may enter the Honors program during your first semester at NOVA, or you may enter later. To be considered for admission to the Honors Core Curriculum, you must meet at least one of the following in each category:

English	Math
Place into Honors Eng 111 via NOVA English Placement test	Place into Honors math via NOVA math placement test
Document an average score of >600 on the new SAT Critical Reading and Essay tests, with no score <500	Document a score of >600 on the new Math SAT exam
Graduate high school in the top 10% of your class	Graduate high school in the top 10% of your class
Submit recommendations from two faculty based on English courses either completed at NOVA or a previous college or in progress at NOVA	Submit recommendations from two faculty based on math or science courses either completed at NOVA or a previous college or in progress at NOVA
Obtain recommendations of an Honors Coordinator based on an interview	Obtain recommendations of an Honors Coordinator based on an interview

Admission to Individual Honors Courses

Admission to individual honors courses and options requires approval of the division, course instructor, or counselor based on test scores, prior achievement, or faculty recommendation.

Honors Core Curriculum

The Honors Core curriculum provides a comprehensive educational experience for honors students and allows them to interact as a community

of learners. You may satisfy the requirements of both the Honors Core and any degree program by enrolling in the honors sections of courses or electives within the degree program requirements. To receive the Honors Core Curriculum designation on your diploma and official transcript, you must be admitted into the Honors Core Curriculum and must complete it with a GPA of 3.0 or higher in all honors courses taken, with no grade below a C in any Honors course. Completion of the Honors Core Curriculum will be designated on your transcript and on your diploma. You will also receive the Honors Certificate of Completion. This represents a significant enhancement of your academic credentials.

Discipline	Credits
English	3
Humanities/Fine Arts	3
Social/Behavioral Sciences	3–5
Physical and Life Sciences/Mathematics	3
¹ Interdisciplinary Seminar	3
² Electives	3–4
Total	18–21

¹ To take the Honors Seminar, it is recommended that you have completed a minimum of 3 semester hours in honors English and 3 semester hours of the humanities, social sciences, and/or math/science honors unit.

² Elective credits may come from any discipline offering an honors course. It is strongly recommended that an Honors SDV course be one of the electives.

DEVELOPMENTAL STUDIES

Developmental courses are designed to provide the basic skills and knowledge necessary for success in college-level courses. These courses (numbered 1 through 9) are available at all campuses of the College in English composition, reading, spelling, English as a Second Language, and mathematics (arithmetic through trigonometry).

Counselors will help you determine through testing the areas in which your skills and knowledge are below college entry level. In some cases you must complete your developmental courses before enrolling in certain courses or being admitted to a curriculum. In other cases, you can take college-level courses along with developmental courses.

Credits earned in these courses are not applicable toward associate degree programs.

A wide variety of instructional methods and materials are used at the College for developmental courses. In some courses there is a choice of either the classroom type of lecture/discussion or individualized (programmed) instruction in which you can work at your own rate of learning. Some developmental courses are offered through the Extended Learning Institute. If you have any questions, please check with a counselor or faculty advisor.



WORKFORCE DEVELOPMENT, CONTINUING EDUCATION, AND COMMUNITY EDUCATION SERVICES

The Office of Workforce Development and Continuing Education on each campus helps to plan and provide many types of credit and non-credit 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 your workplace.

Many non-credit programs are offered each semester to serve special community services needs. A listing of the continuing and community education courses offered at each campus can be found online at www.nvcc.edu/ce.

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 Office of Workforce Development and Continuing Education.

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 service charge of \$20.00 is charged to you 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:

1. The non-credit activity is planned in response to an assessment of educational needs for a specific target population.
2. There is a statement of objectives and rationale.
3. Content is selected and organized in a sequential manner.
4. There is evidence of pre-planning.
5. 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.
6. There is provision for enrollment for individual participants.
7. Evaluation procedures are utilized.
8. Criteria are established for awarding Continuing Education Units to individual students prior to the beginning of the activity.

Continuing Education Units (CEU) for Non-Credit Courses

The College awards Continuing Education Units (CEU) upon completion of most non-credit courses. One CEU represents ten hours of participation in continuing education courses. CEUs are a nationally recognized standard unit of measurement that has been adopted for post-secondary 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.

COOPERATIVE EDUCATION

Cooperative Education provides the opportunity for you to apply the concepts and skills learned in the classroom to a job situation. The professional and technical experience you gain through Cooperative Education establishes a record of performance in your career field and eases your entry into a permanent career position. Over 80% of the Cooperative Education graduates remain with their Co-op employers upon graduation. If you Co-op with a federal government agency, you can be retained non-competitively in a permanent position upon graduation.

To be eligible to participate in Cooperative Education courses, you must:

1. Have declared a major in a degree or certificate program that offers co-op experience.
2. Have completed 15 semester hours of college work or the equivalent, including transfer credit.
3. Have completed a minimum of two courses in your major area of study.
4. Have obtained a 2.00 or better grade point average.
5. Have obtained divisional approval after a review of your academic/employment record and a determination of your potential for success in a Co-op position.

Credit earned in Cooperative Education courses may be used to substitute up to 10 credits of course work in selected degree programs with the approval of your faculty advisor, used for elective credit, or earned as additive credit. For more information about Co-op, contact Counseling Services.

TECH PREP

Tech Prep offers an educational career path beginning in high school and continuing through college. Tech Prep links academic and technical studies and uses input from business, industry, government, and the community to build a curriculum that leads to successful employment. Tech Prep students may earn college credits while in high school through dual enrolled courses offered by local school districts.

If you are interested in NOVA Tech Prep options, you should consult your high school counselor or contact the NOVA Tech Prep Director at rdbrown@nvcc.edu.

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 also offers certificates associated with apprenticeship programs in Air Conditioning and Refrigeration (WO), and Culinary Arts (AN).

WEEKEND COURSES

Weekend courses/programs leading to certificates and degrees are offered at all campuses. They provide students with additional opportunities to pursue their education. Students may accelerate work toward a degree or seek professional enrichment and growth in a time frame conducive to their professional and personal lives. Intensive classroom experience combined with independent study provides an in-depth and meaningful educational experience.

The Annandale campus offers a Weekend Express Program and a Weekend Studies Degree Program. Likewise, the Woodbridge Campus offers Weekend Programs in Business Administration and Information Technology. For further information about these programs, call 703-323-3203 or 323-3157 for Annandale, and 703-878-5712 for Woodbridge.

PROGRAMS OF STUDY

ACCOUNTING

Associate of Applied
Science Degree

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 desire to increase their knowledge and update their skills. The occupational objectives include accounting trainee, accounting technician, junior accountant, and accountant.

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 faculty 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
1st Semester	
ACC 211 Principles of Accounting I	3
BUS 100 Introduction to Business	3
ENG 111 College Composition I	3
ITE 115 Introduction to Computer Appl. & Concepts or AST 236 Specialized Software Appl. or BUS 226 Computer Business Applications	3
¹ MTH 151 Mathematics for the Liberal Arts I	3
² PED 116 Lifetime Fitness & Wellness	1
³ SDV Elective	1
Total	17
2nd Semester	
ACC 212 Principles of Accounting II	3
BUS 125 Applied Business Mathematics	3
BUS 200 Principles of Management	3
ECO 120 Survey of Economics	3
⁴ ENG 112 College Composition II	3
² PED/RPK Elective	1
Total	16
3rd Semester	
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
CST 110 Introduction to Communication or CST 227 Business and Professional Communication	3
⁵ _____ Social Science Elective	3
Total	18
4th Semester	
ACC 222 Intermediate Accounting II	3
ACC 241 Auditing I	3
⁶ ACC Elective	3
BUS 220 Introduction to Business Statistics	3
FIN 215 Financial Management	3
⁷ _____ Humanities/Fine Arts Elective	3
Total	18

Total credits for the A.A.S. Degree in Accounting = 69

¹ Students may substitute a higher-level math. Consult a faculty advisor for appropriate selection.

² 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.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ ENG 115 or ENG 116 may be substituted for ENG 112.

⁵ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

⁶ ACC 215, ACC 219, ACC 230, ACC 232, and ACC 262 are acceptable electives.

⁷ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

BOOKKEEPING

Certificate

AL, AN, LO, MA, WO, ELI

Purpose: The one-year certificate 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
1st Semester	
ACC 211 Principles of Accounting I	3
¹ AST 101 Keyboarding I	3
BUS 100 Introduction to Business	3
ENG 111 College Composition I	3
MTH 151 Mathematics for Liberal Arts I	3
² SDV Elective	1
Total	16
2nd Semester	
ACC 212 Principles of Accounting II	3
ACC 215 Computerized Accounting	3
BUS 125 Applied Business Mathematics	3
ITE 115 Introduction to Computer Applications & Concepts	3
³ _____ Social Science Elective	3
Total	15

Total credits for the Bookkeeping Certificate = 31.

¹ Any IT course that is not already required may be substituted for AST 101.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

ACCOUNTINGCareer Studies Certificate **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 Accounting (C.P.A.) examination. As of 7/1/06, to sit for any parts of the exam in Virginia, one will need 150 credits, including a baccalaureate degree, 30 semester credits of accounting (including principles, intermediate, advanced, cost and not-for-profit and government accounting, income taxation, and auditing) and 24 semester credits of business (including management, law, finance, economics, and information systems). The national CPA exam is a 14-hour computer-based test with four sections: Auditing & Attestation, Financial Accounting & Reporting, Regulation (includes ethics, law & taxation), and Business Environment & Concepts. Generally, candidates have 18 months to pass all four sections and retain credit. For requirements in other states, it is recommended that you check with that accounting profession's authoritative state board.

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

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

One Year		Credits
1st Semester		
ACC	219 Government & Not-For-Profit Accounting	3
ACC	221 Intermediate Accounting I	3
ACC	261 Principles of Federal Taxation I	3
¹ ENG/CST	Elective	3
Total		12
2nd Semester		
ACC	222 Intermediate Accounting II	3
ACC	231 Cost Accounting I	3
ACC	262 Principles of Federal Taxation II	3
Total		9
3rd Semester		
ACC	230 Advanced Accounting	3
ACC	241 Auditing	3
Total		6

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.

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

¹ The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.

ADMINISTRATION OF JUSTICEAssociate of Applied Science Degree **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. The occupational objectives 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 director (manager), loss prevention director, classification manager, and personnel clearance administrator. 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
1st Semester		
ADJ	100 Survey of Criminal Justice	3
¹ ADJ	111 Law Enforcement Organization and Administration I	3
ADJ	Elective or BUS 100 Introduction to Business	3
ENG	111 College Composition I	3
² PED	116 Lifetime Fitness & Wellness	1
³ _____	Social Science Elective	3
⁴ SDV	Elective	1
Total		17
2nd Semester		
ADJ	105 The Juvenile Justice System	3
ADJ	107 Survey of Criminology	3
⁵ ADJ	Elective or ADJ 159 Physical Security	3
⁶ MTH	151 Mathematics for the Liberal Arts I	3
² PED/RPK	Elective	1
³ _____	Social Science Elective	3
Total		16
3rd Semester		
ADJ	211 Criminal Law, Evidence and Procedures I	3
ADJ	216 Organized Crime & Corruption	3
ADJ	236 Principles of Criminal Investigation or ADJ 234 Terrorism and Counter-Terrorism	3
CST	110 Introduction to Communication	3
⁷ _____	Humanities/Fine Arts Elective	3
ITE	115 Introduction to Computer Applications and Concepts	3
Total		18

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 & Dangerous Drugs or ADJ 248 Probation/Parole/Treatment	3
⁵ ADJ	Elective or ADJ 255 Security Management or ADJ 256 Information Security	3
PLS	135 American National Politics or HIS 121 U.S. History I	3
Total		15

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

Although not required as part of this program, students planning to transfer to George Mason University (GMU) may wish to complete eight hours of a laboratory science while attending NOVA. Check the current GMU Catalog or contact a GMU faculty advisor if you have questions.

- ¹ ADJ 140 Introduction to Corrections or ADJ 150 Introduction to Security Administration may be substituted.
- ² 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.
- ³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. PSY 201–202 or Sociology 201–202 is recommended.
- ⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ⁵ Students interested in a career in the field of corrections should take corrections courses as ADJ electives.
- ⁶ May substitute a higher-level math.
- ⁷ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

ADMINISTRATION OF JUSTICE

Certificate **AN, MA, WO**

Purpose: The certificate curriculum in Administration of Justice 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 persons 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:

The same requirements apply as stated for the A.A.S. curriculum.

One Year		Credits
1st Semester		
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
¹ ___	Social Science Elective	3
² SDV	Elective	1
Total		16

2nd Semester		
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
³ ITE	115 Introduction to Computer Applications and Concepts	3
¹ ___	Social Science Elective	3
Total		18

Total credits for the Administration of Justice Certificate = 34

- ¹ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. PSY 201–202 or SOC 201–202 are recommended.
- ² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ³ Or IT elective approved by faculty advisor.

**ADMINISTRATION OF JUSTICE:
GENERAL FORENSIC INVESTIGATION**

Career Studies Certificate **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 needing training for promotion. The curriculum can be applied toward program electives in the Associate of Applied Science degree in Administration of Justice.

One Year		Credits
1st Semester		
ADJ	171 Forensic Science I	4
ENG	111 College Composition I	3
MTH	151 Math for the Liberal Arts I	3
Total		10
2nd Semester		
ADJ	212 Criminal Law, Evidence, and Procedures II	3
¹ ADJ	275 Forensic Pathology or ² ADJ 298 Homicide Seminar or BIO 101 General Biology I or CHM 101 General Chemistry I	3–4
³ ADJ	Forensic Elective	3
Total		9–10

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.

- ¹ Course should be selected according to desired Forensic specialty or emphasis.
- ² Homicide seminar must be three-credit option.
- ³ Approved Forensic elective courses include the following: ADJ 118, ADJ 127, ADJ 134, ADJ 157, ADJ 164, ADJ 165, ADJ 172, ADJ 173, ADJ 174, ADJ 175, ADJ 176, ADJ 186, ADJ 226, ADJ 235, ADJ 236, ADJ 237, ADJ 276, ADJ 278.

ADMINISTRATION OF JUSTICE: ADVANCED FORENSIC INVESTIGATION

Career Studies Certificate **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 assistant dean.

One Year Credits

1st Semester		
ADJ	172 Forensic Science II	4
¹ ADJ	Forensic Elective	3-4
¹ ADJ	Forensic Elective	3-4
ENG	111 College Composition I or CST 110 Intro to Communication	3
Total		13-15

2nd Semester		
¹ ADJ	Forensic Elective	3-4
² ADJ	Elective	3
² ADJ	Elective	3
Total		9-10

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.

¹ Approved Forensic elective courses include 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.

² May be ADJ, BIO, CHM, or ADJ Forensic elective.

ADMINISTRATION OF JUSTICE: SECURITY MANAGEMENT

Career Studies Certificate **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 Sciences degree in Administration of Justice.

One Year Credits

1st Semester		
ADJ	255 Security Management	3
¹ ADJ	Elective	3
² ENG/CST	Elective	3
Total		9

2nd Semester		
ADJ	159 Physical Security	3
ADJ	256 Information Security or ADJ 157 Computer Security	3
³ _____	General Elective	1-3
Total		7-9

Total credits for 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.

¹ Select one from the following: ADJ 150, ADJ 228, or ADJ 234.

² The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.

³ Elective must be chosen with advisor's approval.

AIR CONDITIONING AND REFRIGERATION

Associate of Applied Science Degree **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 HVACR industry. Occupational objectives include industry licensing, advanced critical thinking skills and state tradesman licenses in HVACR.

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 faculty advisor early in their program.

Two Years Credits

1st Semester		
AIR	111 Air Conditioning & Refrigeration Controls I	3
AIR	121 Air Conditioning & Refrigeration I	4
ENG	111 College Composition I	3
¹ _____	Humanities/Fine Arts Elective	3
PHY	101 Introduction to Physics	4
² SDV	Elective	1
Total		18

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

3rd Semester		
AIR	205 Hydronics & Zoning	4
AIR	213 Air Conditioning & Refrigeration Controls III	4
AIR	251 Air Conditioning Systems I	4
CST	110 Introduction to Communication	3
⁴ _____	Social Science Elective	3
Total		18

4th Semester		
AIR	207 Heat Loads and Psychrometrics	4
AIR	235 Heat Pumps	4
AIR	238 Advanced Troubleshooting & Service	4
AIR	252 Air Conditioning Systems II	4
³ PED/RPK	Elective	1
Total		17

Total credits for the A.A.S. Degree in Air Conditioning and Refrigeration = 69

- ¹ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.
- ² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ³ 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.
- ⁴ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives

AIR CONDITIONING AND REFRIGERATION

Certificate **WO**

Purpose: The certificate program is intended to prepare students for jobs in the air conditioning and refrigeration field. Upon successful completion of the program, the student is enabled to take full-time employment. The occupational objectives include service, maintenance, repair, and installation of air-conditioning and refrigeration equipment.

One Year	Credits
1st Semester	
AIR 111 Air Conditioning & Refrigeration Controls I	3
AIR 121 Air Conditioning & Refrigeration I	4
AIR 154 Heating Systems I	4
ENG 111 College Composition I	3
¹ SDV Elective	1
Total	15
2nd Semester	
AIR 122 Air Conditioning & Refrigeration II	4
AIR 134 Circuits & Controls	3
AIR 213 Air Conditioning & Refrigeration Controls III	4
PHY 101 Intro to Physics	4
² Social Science Elective	3
Total	18

Total credits for the Air Conditioning and Refrigeration Certificate = 33

- ¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

AIR CONDITIONING AND REFRIGERATION: HVAC-R AND FACILITIES SERVICES TECHNOLOGY

Career Studies Certificate **WO**

Purpose: The Heating, Ventilation, Air Conditioning, Refrigeration (HVAC-R) and Facilities Services Technology Career Studies Certificate 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.

One Year	Credits
1st Semester	
AIR 111 Air Conditioning & Refrigeration Controls I	3
AIR 121 Air Conditioning & Refrigeration I	4
¹ AIR 154 Heating Systems I or BLD 20 Intro to Plumbing	2-4
² ENG/CST Elective	3
Total	12-14
2nd Semester	
AIR 122 Air Conditioning & Refrigeration II	4
AIR 134 Circuits and Controls	3
³ BLD 96 On Site Training or BLD 195 Cooperative Education	2
SDV 106 Preparation for Employment	1
Total	10

Total credits for the HVAC-R and Facilities Services Technology Career Studies Certificate = 22-24

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

- ¹ Students who plan to work in the air conditioning and refrigeration industry or who plan to complete the Air Conditioning and Refrigeration Certificate or AAS degree should take AIR 154, while students who plan to work in facilities maintenance should take BLD 20. See your advisor for details.
- ² The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.
- ³ Students will be eligible to participate in paid or unpaid work-based learning experiences depending upon their qualifications and workforce conditions. See your faculty advisor for details.

AMERICAN SIGN LANGUAGE TO ENGLISH INTERPRETATION

Associate of Applied Science Degree **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 or national certification through the Registry of Interpreters for the Deaf. 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 following courses with a grade of C or better: ASL 202: ASL IV or a program assessment, ASL 125: The History and Culture of the Deaf Community, and ASL 115: Fingerspelling and Number Use in ASL.

Two Years Credits

1st Semester

ASL	261 American Sign Language V	3
CST	110 Introduction to Communication	3
ENG	111 College Composition I	3
INT	105 Interpreting Foundations I	3
¹ SDV	Elective	1
Total		13

2nd Semester

ASL	220 Comparative Linguistics: ASL and English	3
ASL	262 American Sign Language VI	3
INT	106 Interpreting Foundations II	3
INT	107 Translation Skills	3
² ___	Humanities/Fine Arts Elective	3
Total		15

3rd Semester (summer)

INT	141 Transliterating I	3
³ PED	116 Lifetime Fitness and Wellness	1
Total		4

4th Semester

INT	130 Interpreting: An Introduction to the Profession	3
INT	133 ASL-to-English Interpretation I	3
INT	134 English-to-ASL Interpretation I	3
⁴ ___	Math Elective or Science Elective	3-4
⁵ ___	Approved Social Science Elective	3
Total		15-16

5th Semester

INT	233 ASL-to-English Interpretation II	3
INT	234 English-to-ASL Interpretation II	3
INT	Approved INT Elective (INT 235, 236, 242)	3
³ ___	PED/RPK Elective	1
⁵ ___	Approved Social Science Elective	3
Total		13

6th Semester (summer)

INT	250 Dialogic Interpretation I	3
INT	290 Coordinated Internship	5
Total		8

Total credits for the American Sign Language to English Interpretation A.A.S. Degree = 68-69

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

³ 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.

³ Students may choose MTH 151 or higher or Natural Science/ Lab Elective chosen from the courses listed under General Education Electives.

⁴ The social science elective may be selected from the social/ behavioral sciences courses listed under General Education Electives. Base selection on requirements of transfer institution.

AMERICAN SIGN LANGUAGE (ASL)

Career Studies Certificate **AN**

Purpose: This program prepares students to communicate proficiently in American Sign Language, including both expressive and receptive skills. Some students will transfer course credits to four-year institutions. Other students will be able to enhance their skills and employability in careers such as teaching, in the health or social service occupations, or in public safety positions.

Admission Requirements: Successful completion of ASL 101 American Sign Language I, or consent of instructor based on demonstrably equivalent skill level.

One Year Credits

1st Semester

ASL	102 American Sign Language II	4
ASL	125 History & Culture of the Deaf Community	3
ENG	111 College Composition I	3
Total		10

2nd Semester

ASL	115 Fingerspelling and Number Use in ASL	2
ASL	201 American Sign Language III	4
ASL	220 Comparative Linguistics: ASL & English	3
Total		9

3rd Semester

ASL	202 American Sign Language IV	4
Total		4

Total credits for the American Sign Language (ASL) Career Studies Certificate = 23

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

AMERICAN SIGN LANGUAGE (ASL) INTERPRETING

Career Studies Certificate **AN**

Purpose: This program prepares students for careers in which it is necessary or helpful to proceed beyond sign language skills to become an interpreter. This requires vocabulary development, and enhanced processing, transliterating, and interpreting skills. Students will be prepared to take the Virginia Quality Assurance Screening (VQAS) examination, passing it at a level sufficient to permit entry-level employment as a full-time or freelance professional interpreter in educational or governmental settings or private practice.

Admission Requirements: Successful completion of ASL 202 American Sign Language IV, ASL 125 The History and Culture of the Deaf Community, and INT 130 Interpreting: An Introduction to the Profession, or consent of instructor based on demonstrably equivalent skill level.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
INT	105 Foundations of Interpreting I	3
Total		6
2nd Semester		
INT	106 Foundations of Interpreting II	3
INT	107 Translation Skills	3
Total		6
3rd Semester		
INT	133 ASL-to-English Interpretation I	3
INT	134 English-to-ASL Interpretation I	3
Total		6
4th Semester		
INT	141 Transliterating I	3
INT	233 ASL-to-English Interpretation II	3
INT	234 English-to-ASL Interpretation II	3
Total		9

Total credits for the American Sign Language (ASL) Interpreting 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.

ARCHITECTURE TECHNOLOGY

Associate of Applied Science Degree **AL, AN**

Purpose: The Architecture curriculum is designed to prepare students for employment. Students must see their architecture advisor to satisfy individual goals. The graduates will find employment in the field of architecture, construction, and urban design utilizing their construction knowledge, graphic communication, and problem solving skills.

Recommended Preparation: Two years of high school algebra and geometry.

Two Years **Credits**

1st Semester		
ARC	123 Architectural Graphics I	3
ARC	133 Construction Methodology & Procedures I	3
ARC	200 History of Architecture	4
CAD	201 Computer Aided Drafting and Design I	4
ENG	111 College Composition I	3
¹ SDV	Elective	1
Total		18

2nd Semester		
ARC	124 Architectural Graphics II	3
ARC	134 Construction Methodology & Procedures II	3
ARC	138 Structures for Architects	3
ARC	201 History of Modern Architecture	3
² ARC	298 Seminar and Project or ARC Technical Elective	3
³ MTH	115 Technical Math I	3
Total		18

3rd Semester		
ARC	225 Site Planning	3
ARC	231 Architectural Design & Graphics I	4
ARC	243 Environmental Systems	4
CAD	202 Computer Aided Drafting and Design II	4
⁴ _____	Social Science Elective	3
Total		18

4th Semester		
ARC	232 Architectural Design and Graphics II	4
⁵ CST	Elective	3
⁶ _____	Humanities/Fine Arts Elective	3
⁷ PED	116 Lifetime Fitness and Wellness	1
⁷ PED/RPK	Elective	1
⁸ _____	Technical Elective	3
Total		15

Total credits for the A.A.S. Degree in Architecture Technology = 69

Colleges and universities offering Bachelor of Science in Architecture and Master of Architecture degrees may accept NOVA graduates as transfer students. See ARC faculty for details.

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² ARC 298 is recommended for the students who are planning to transfer to four year colleges.

³ MTH 163 (3 cr.) or higher may be substituted for MTH 115. MTH 166 (5 cr.) is recommended for students who wish to transfer.

⁴ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

⁵ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.

⁶ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

⁷ 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.

⁸ Courses may be selected from ARC, BLD, and CAD.

ARCHITECTURAL DRAFTINGCertificate **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. degree in Architecture. Occupational objectives include architectural draftsman and engineering aide.

Recommended Preparation: Two years of high school algebra and geometry.

One Year Credits

1st Semester			
ARC	123 Architectural Graphics I	3	
ARC	133 Construction Methodology & Procedures I	3	
CAD	201 Computer Aided Drafting and Design I	4	
ENG	111 College Composition I	3	
¹ SDV	Elective	1	
Total		14	

2nd Semester

ARC	124 Architectural Graphics II	3	
ARC	134 Construction Methodology & Procedures II	3	
CAD	202 Computer Aided Drafting and Design II	4	
² MTH	115 Technical Math. I	3	
³ _____	Technical Elective	3	
Total		16	

Total credits for the Architectural Drafting Certificate = 30

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² MTH 166 (5 cr.) may be substituted for MTH 115.

³ Courses may be selected from ARC, BLD, and CAD.

AUTOMOTIVE TECHNOLOGYAssociate of Applied Science Degree **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. The occupational objectives include line technician, new car make-ready, and customer service representative.

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 faculty advisor early in their program.

Two Years Credits

1st Semester			
AUT	100 Introduction 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	101 Introduction to Physics I or MTH 151 Math for the Liberal Arts or PHY 130 Survey of Applied Physics	3-4	
¹ SDV	Elective	1	
Total		17-18	

2nd Semester

AUT	112 Automotive Engines II	4	
AUT	122 Automotive Fuel Systems II	4	
AUT	241 Automotive Electricity I	4	
CST	110 Introduction to Communication	3	
² _____	Social Science Elective	3	
Total		18	

3rd Semester

AUT	236 Automotive Climate Control	4	
Total		4	

4th Semester

AUT	141 Automotive Power Trains I	4	
AUT	242 Automotive Electricity II	4	
AUT	265 Automotive Braking Systems	4	
³ PED	116 Lifetime Fitness/Wellness	1	
Total		13	

5th Semester

AUT	142 Automotive Power Trains II	4	
AUT	245 Automotive Electronics	4	
AUT	266 Automotive Alignment, Suspension, & Steering	4	
⁴ _____	Humanities/Fine Arts Elective	3	
³ PED/RPK	Elective	1	
Total		16	

Total credits for the A.A.S. Degree in Automotive Technology = 68-69

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

³ 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.

⁴ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

**AUTOMOTIVE TECHNOLOGY:
EMISSIONS SPECIALIZATION**Associate of Applied Science Degree **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. The occupational objectives include line technician, new car make-ready, and customer service representative.

Two Years Credits

1st Semester			
AUT	100 Introduction 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	101 Introduction to Physics I or MTH 151 Math for the Liberal Arts or PHY 130 Survey of Applied Physics	3-4	
¹ SDV	Elective	1	
Total		17-18	

2nd Semester		
AUT	122 Automotive Fuel Systems II	4
AUT	215 Emissions Systems Diagnosis/Repair	2
AUT	241 Automotive Electricity I	4
CST	110 Introduction to Communication	3
ITE	115 Introduction to Computer Applications & Concepts	3
Total		16

3rd Semester		
AUT	236 Automotive Climate Control	4
Total		4

4th Semester		
AUT	141 Automotive Power Trains I	4
AUT	242 Automotive Electricity II	4
AUT	265 Automotive Braking Systems	4
² PED	116 Lifetime Fitness & Wellness	1
³ ___	Social Science Elective	3
Total		16

5th Semester		
AUT	142 Automotive Power Trains II	4
AUT	226 Advanced ASM Emissions Diagnostics	2
AUT	266 Automotive Alignment, Suspension & Steering	4
⁴ ___	Humanities/Fine Arts Elective	3
² PED/RPK	Elective	1
Total		14

Total credits for the A.A.S. Degree in Automotive Technology with a Specialization in Emissions = 67-68

- ¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ² 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.
- ³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ⁴ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

**AUTOMOTIVE TECHNOLOGY:
AUTOMOTIVE EMISSIONS**

Certificate **AL, MA**

Purpose: This curriculum is designed to provide current theory, experience, and development for those who desire careers as emission control technicians, diagnosticians, and service technicians. Includes recent technical innovations in emission controls, electronics, automatic engine controls, and fuel management.

One Year	Credits	
1st Semester		
AUT	100 Introduction to Automotive Shop Practices	2
AUT	111 Automotive Engines I	4
AUT	121 Automotive Fuel Systems I	4
AUT	241 Automotive Electricity I	4
ENG	111 College Composition or	
	ENG 131 Technical Report Writing I	3
¹ SDV	Elective	1
Total		18

2nd Semester		
AUT	122 Automotive Fuel Systems II	4
AUT	226 Advanced ASM Emissions Diagnostics	2
AUT	242 Automotive Electricity II	4
² ___	Social Science Elective	3
Total		13

Total credits for the Automotive Emissions Certificate = 31

- ¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

**AUTOMOTIVE TECHNOLOGY:
AUTOMOTIVE ELECTRICAL TECHNICIAN**

Certificate **AL, MA**

Purpose: This curriculum is designed for persons who seek full-time employment as entry-level automotive service technicians. The curriculum includes electrical theory and application to advance the student as an automotive electrical technician. Occupational objectives include diagnostician specialist, emission control technicians, and service technicians.

One Year	Credits	
1st Semester		
AUT	100 Introduction to Automotive Shop Practices	2
AUT	111 Automotive Engines I	4
AUT	241 Automotive Electricity I	4
ENG	111 College Composition I or	
	ENG 131 Technical Report Writing I	3
MTH	103 Applied Technical Mathematics I	3
¹ SDV	Elective	1
Total		17
2nd Semester		
AUT	122 Automotive Fuel Systems II	4
AUT	242 Automotive Electricity II	4
AUT	245 Automotive Electronics	4
² ___	Social Science Elective	3
Total		15

Total credits for the Automotive Electrical Technician Certificate = 32

- ¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

AUTOMOTIVE TECHNOLOGY: AUTOMOTIVE MAINTENANCE AND LIGHT REPAIR

Career Studies Certificate **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.

One Year		Credits
1st Semester		
AUT	236 Automotive Climate Control	4
AUT	241 Automotive Electricity I	4
ENG	111 College Composition I or ENG 131 Technical Report Writing I	3
Total		11
2nd Semester		
AUT	265 Automotive Braking Systems	4
AUT	266 Automotive Alignment, Suspension and Steering	4
Total		8

Total credits for the Automotive Maintenance and Light Repair 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.

AUTOMOTIVE TECHNOLOGY: COLLISION REPAIR TECHNOLOGY

Career Studies Certificate **AL**

Purpose: This career studies certificate prepares students for entry-level positions as collision repair technicians. The curriculum provides experience in evaluation, repair, and refinishing of automotive body damage.

Recommended Preparation: It is important that the student talk with a counselor concerning selected classes in the curriculum.

One Year		Credits
1st Semester		
AUB	106 Basic Sheet Metal Operations	4
AUT	100 Introduction to Automotive Shop Practices	2
ENG	131 Technical Report Writing I or CST 110 Introduction to Communication	3
Total		9
2nd Semester		
AUB	118 Automotive Paint Preparation	4
AUB	125 Automotive Body Welding	4
Total		8
3rd Semester		
AUB	116 Automotive Body Repair	4
AUB	119 Automotive Painting	4
Total		8

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.

AUTOMOTIVE TECHNOLOGY: DIESEL MECHANICS TECHNOLOGY

Career Studies Certificate **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
1st Semester		
DSL	111 Introduction to Diesel Engine	2
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
SDV	Elective	1
Total		14
2nd Semester		
DSL	123 Diesel Engine Systems I	2
DSL	143 Diesel Truck Electrical Systems	4
DSL	160 Air Brake Systems	3
MEC	161 Basic Fluid Mechanics-Hydraulics and Pneumatics	4
Total		13

Total credits for the Diesel Mechanics Technology Career Studies Certificate = 27

BIOTECHNOLOGY

Associate of Applied Science Degree **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 faculty advisor early in their program.

Recommended Preparation: Students should be proficient in high school English, Algebra and Biology.

Two Years		Credits
1st Semester		
BIO	101 General Biology or BIO 173 Biology for Biotechnology	4
CHM	111 College Chemistry I	4
ENG	111 College Composition I	3
ITE	115 Introduction to Computer Applications & Concepts	3
SDV	101 Orientation to Biotechnology	1
Total		15
2nd Semester		
BIO	170 Biotechnology Methods	2
BIO	253 Biotechnology Concepts	3
CHM	112 College Chemistry II	4
MTH	157 Elementary Statistics	4
Total		13
3rd Semester		
BIO	205 General Microbiology	4
¹ ___	Social Science Elective	3
Total		7
4th Semester		
BIO	206 Cell Biology	4
² ___	Biotechnology Science Elective	3
³ ENG	115 Technical Writing	3
⁴ PED/ RPK	Elective	2
¹ ___	Social Science Elective	3
Total		15
5th Semester		
⁵ ___	Biotechnology Applied Science Elective	4
⁶ ___	Biotechnology Experiential Learning Elective	3
BIO	254 Capstone Seminar in Biotechnology	2
⁷ CST	126 Interpersonal Communication	3
⁸ ___	Humanities/Fine Arts Elective	3
Total		15

Total credits for the A.A.S. Degree in Biotechnology = 65

- ¹ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ² Biotechnology elective in the science category may be selected from BIO 256 (General Genetics, 4 cr.), CHM 260 (Introductory Biochemistry, 3 cr.) or MDL 215 (Immunology, 2 cr.) Students who choose MDL 215 must take one additional credit in the Biotechnology Experiential Learning category.
- ³ Students who plan to transfer to a university may wish to consider taking ENG 112 College Composition II.
- ⁴ 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 any RPK activities course. PED 116 is offered as both a 1-credit and a 2-credit course.
- ⁵ Biotechnology elective in the applied science category may be selected from BIO 251 (Biotechnology I: Protein Research, 4 cr.) or BIO 252 (Biotechnology II: DNA Research, 4 cr.).
- ⁶ Biotechnology electives in the experiential learning category may be selected from BIO 290 (Coordinated Internship), BIO 296 (On-Site Training in Biotechnology), BIO 297 (Cooperative Education), BIO 298 (Seminar and Project), and BIO 299 (Supervised Study). A total of 3 credits in this category is required, from a combination of 1–3 credits in any of these courses.
- ⁷ Students can also substitute CST 100, 110, 115, 227 or 229.
- ⁸ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

BIOTECHNOLOGY LAB TECHNICIAN

Career Studies Certificate

LO, MA

Purpose: This Career Studies Certificate 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: a) career changers who already have a bachelor's degree, b) scientists who were trained in foreign countries who need updated training, c) current A.S. in Science students who want to obtain a core of biotech courses and/or find a job in local industry while they complete their undergraduate degrees, and d) high school teachers who wish to refine their own biotechnology skills and obtain the required re-training necessary for continued teacher certification.

Prerequisites: Because jobs in biotechnology generally require at least an associate's degree, students must already have a 2 or 4 year college degree, be enrolled in the Science A.S., 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.

One Year		Credits
1st Semester		
¹ ENG/CST	Elective	3
BIO	250 Biotechnology Research Methods and Skills	2
BIO	253 Biotechnology Concepts	3
Total		8
2nd Semester		
BIO	251 Protein Biotechnology or BIO 252 Nucleic Acid Methods	4
BIO	254 Capstone Seminar in Biotechnology	2
² BIO	290 Coordinated Internship in Biotechnology	4
Total		8

Total credits for the Biotechnology Lab Technician Career Studies Certificate = 16

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

- ¹ Students who have taken ENG 111 or the equivalent are strongly encouraged to take ENG 115 Technical Writing.
- ² Students must be approved by the biotechnology program coordinator 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.

BUSINESS ADMINISTRATION

Associate of
Science Degree **AL, AN, LO, MA, WO, ELI**

Purpose: The Associate of Science degree curriculum in Business Administration is designed for persons 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 faculty 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
1st Semester		
ENG	111 College Composition I	3
¹ HIS	Elective	3
ITE	115 Introduction to Computer Applications & Concepts	3
² MTH	Elective	3-5
³ ___	Natural Science/Lab Elective	4
⁴ SDV	Elective	1
Total		17-19
2nd Semester		
BUS	100 Introduction to Business	3
⁵ ENG	112 College Composition II	3
² MTH	Elective	3-5
³ ___	Natural Science/Lab Elective	4
⁶ PED	116 Lifetime Fitness & Wellness	1
Total		14-16
3rd Semester		
ACC	211 Principles of Accounting I	3
⁷ CST	Elective	3
ECO	201 Principles of Economics I	3
⁸ ___	General Elective	3
⁹ ___	Humanities/Fine Arts Elective	3
⁶ PED/RPK	Elective	1
Total		16
4th Semester		
ACC	212 Principles of Accounting II	3
ECO	202 Principles of Economics II	3
⁸ ___	General Elective	6
⁹ ___	Humanities/Fine Arts Elective	3
Total		15

Total credits for the A.S. Degree in Business Administration = 62-66

¹ HIS 101, 102, 121 or 122 is recommended. HIS elective may be selected from the HIS courses listed under the social/behavioral sciences courses listed under General Electives.

² MTH 163 and 271, or MTH 173-174. For transfer to GMU, MTH 271 is recommended. A student may skip MTH 163 and start with MTH 271 if he/she has had 1 year of high school math beyond Algebra II (Trig., Functions, Calculus, etc.) and a NOVA placement test eligibility score for MTH 271. Students starting with MTH 271 or transferring to GMU should consult a faculty advisor for second NOVA MTH course.

³ 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.

⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁵ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁶ 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.

⁷ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.

⁸ Consult your advisor for assistance in selecting general electives that will meet requirements of the institution to which you plan to transfer. BUS 221-222 and MTH 241-242 and ITE 140 will meet GMU business major core requirements.

⁹ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

BUSINESS MANAGEMENT

Associate of Applied
Science Degree **AL, AN, LO, MA, WO, ELI**

Purpose: The curriculum is designed for persons who seek employment in business management or for those presently in management who are seeking promotion. The occupational objectives 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 faculty 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
1st Semester		
ACC	211 Principles of Accounting I	3
BUS	100 Introduction to Business	3
ENG	111 College Composition I	3
¹ MTH	151 Mathematics for the Liberal Arts I	3
² PED	116 Lifetime Fitness & Wellness	1
³ ___	Social Science Elective	3
⁴ SDV	Elective	1
Total		17
2nd Semester		
ACC	212 Principles of Accounting II	3
⁵ BUS	125 Applied Business Mathematics	3
BUS	200 Principles of Management	3
⁶ ___	Business Elective	3
ENG	112 College Composition II	3
MKT	201 Introduction to Marketing	3
Total		18

3rd Semester		
BUS	201 Organizational Behavior	3
BUS	202 Applied Management Principles	3
BUS	241 Business Law I	3
⁷ CST	Elective	3
⁸ ECO	120 Survey of Economics	3
⁹ _____	Humanities/Fine Arts Elective	3
Total		18

4th Semester		
BUS	205 Human Resource Management	3
BUS	220 Introduction to Business Statistics	3
BUS	226 Computer Business Applications or AST 236 Specialized Software Applications or ITE 115 Introduction to Computer Applications & Concepts	3
BUS	242 Business Law II	3
FIN	215 Financial Management	3
² PED/RPK	Elective	1
Total		16

Total credits for the A.A.S. Degree in Business Management = 69

Check course description in this catalog for requirements regarding placement test and/or prerequisite.

- ¹ Students may substitute a higher-level math. Consult a faculty advisor for appropriate selection.
- ² 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.
- ³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ⁵ Students considering transfer should consult a faculty advisor.
- ⁶ The business elective may be selected from ACC, AST, BUS, CON, ECO, FIN, HRI, IT, MKT, or REA. Students considering transfer should consult a faculty advisor for appropriate choices.
- ⁷ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.
- ⁸ Students considering transfer may take ECO 201 or ECO 202 after consulting a faculty advisor.
- ⁹ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

BUSINESS MANAGEMENT: ADMINISTRATIVE SUPPORT TECHNOLOGY SPECIALIZATION

Associate of Applied Science Degree **AL, WO, ELI**

Purpose: This specialization is designed for persons who seek employment in the field of administrative support technology, 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 regarding office technology. Occupational objectives include administrative support professional and office administration/management specialists.

Two Years		Credits
1st Semester		
ACC	211 Principles of Accounting I	3
¹ AST	141 Word Processing I	3
BUS	100 Introduction to Business	3
ENG	111 College Composition I	3
² MTH	151 Mathematics for the Liberal Arts I	3
³ PED	116 Lifetime Fitness and Wellness	1
⁴ SDV	Elective	1
Total		17

2nd Semester		
AST	107 Editing/Proofreading Skills	3
⁵ BUS	125 Applied Business Mathematics	3
BUS	200 Principles of Management	3
ENG	112 College Composition II	3
MKT	201 Introduction to Marketing	3
⁶ _____	Social Science Elective	3
Total		18

3rd Semester		
BUS	201 Organizational Behavior	3
BUS	226 Computer Business Applications or AST 236 Specialized Software Application or ITE 115 Introduction to Computer Applications & Concepts	3
⁷ CST	Elective	3
⁸ _____	Business Elective	3
⁹ _____	Humanities/Fine Arts Elective	3
ITD	110 Webpage Design I or ART 116 Design for the Web I or ENG 123 Writing for the World Wide Web	3
Total		18

4th Semester		
AST	234 Records and Database Management	3
AST	243 Office Administration I	3
BUS	205 Human Resource Management	3
BUS	241 Business Law I	3
¹⁰ ECO	120 Survey of Economics	3
³ PED/RPK	Elective	1
Total		16

Total credits for the Business Management A.A.S. Degree with a Specialization in Administrative Support Technology = 69

Check course descriptions in this catalog for requirements regarding placement test and/or prerequisite.

- ¹ Prerequisite is AST 101 or division approval.
- ² Students may substitute a higher level of math. Consult a faculty advisor for appropriate selection.
- ³ 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.
- ⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ⁵ Students considering a transfer should consult a faculty advisor.
- ⁶ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ⁷ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.
- ⁸ It is strongly recommended that AST 260, Presentation Software, AST 253, Advanced Desktop Publishing I or ITE 140 Spreadsheet Software be taken for this elective. Other business electives may be selected from accounting, administrative support technology, contract management, marketing, or real estate. Students considering transfer should consult a faculty advisor for appropriate choices.
- ⁹ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.
- ¹⁰ Students considering transfer may take ECO 201 or 202 after consulting a faculty advisor.

**BUSINESS MANAGEMENT:
FINANCE SPECIALIZATION**

Associate of Applied

Science Degree

AL, AN, LO, MA, WO

Purpose: The specialization in Finance is designed to be broadly based and cover general concepts and principles as they apply to a wide area of finance including the financial management of business firms, real estate finance, international finance, personal finance, and securities investments. A graduate of this program will be competent for an entry level position in any of the financial services industries and will have the overall academic preparation needed to make it possible to advance to a higher level position.

Two Years		Credits
1st Semester		
ACC	211 Principles of Accounting	3
BUS	100 Introduction to Business	3
ENG	111 College Composition I	3
¹ MTH	151 Mathematics for the Liberal Arts I	3
² PED	116 Lifetime Fitness & Wellness	1
³ _____	Social Science Elective	3
⁴ SDV	Elective	1
Total		17
2nd Semester		
ACC	212 Principles of Accounting II	3
BUS	125 Applied Business Math	3
ENG	112 College Composition II	3
FIN	107 Personal Finance	3
ITE	115 Introduction to Computer Applications & Concepts or AST 236 Specialized Software Appl. or BUS 226 Computer Business Applications	3
MKT	201 Introduction to Marketing	3
Total		18
3rd Semester		
BUS	220 Introduction to Business Statistics	3
BUS	241 Business Law I	3
⁵ CST	Elective	3
⁶ ECO	120 Survey of Economics	3
FIN	215 Financial Management	3
⁷ _____	Humanities/Fine Arts Elective	3
Total		18
4th Semester		
BUS	200 Principles of Management	3
BUS	205 Human Resource Management	3
FIN	108 Principles of Securities Investment	3
FIN	248 International Finance	3
² PED/RPK	Elective	1
REA	217 Real Estate Finance	3
Total		16

**Total credits for the A.A.S. Degree in Business Management
with a Specialization in Finance = 69**

¹ Students may substitute a higher-level math. Consult with a faculty advisor for appropriate selection.

² 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.

³ The social science elective may be selected from the
social/behavioral sciences courses listed under General
Education Electives.

⁴ Students can take SDV 100 College Success Skills or the SDV 101
Orientation section related to their particular program..

⁵ The CST elective may be selected from the following: CST 100, 110,
115, 126, 227 or 229.

⁶ Students seeking to transfer to a four-year college need to take
ECO 201–202.

⁷ Humanities/fine arts elective may be selected from the humanities/
fine arts courses listed under General Education Electives.

**BUSINESS MANAGEMENT: HEALTHCARE
ADMINISTRATION SPECIALIZATION**

Associate of Applied

Science Degree

AL, AN, LO, MA, WO

Purpose: This curriculum is designed for persons who seek employment as a supervisor, manager or assistant manager in a physician's office or other medical practice. The program of study blends training in the principles of business operations, management, and healthcare administration, to include marketing, human resource management, reimbursement, accreditation standards, legal issues, and computer applications. A graduate of this program will be prepared for an entry-level position in the healthcare industry and will have the overall academic preparation needed to make it possible to advance to a higher-level position along with further education.

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

The HIM courses in this degree are only offered at the Medical Education Campus or through ELI.

Two Years		Credits
1st Semester		
ACC	211 Principles of Accounting I	3
BUS	100 Introduction to Business	3
ENG	111 College Composition I	3
HIM	141 Fundamentals of Health Information Systems I	3
¹ MTH	151 Mathematics for the Liberal Arts I	3
² SDV	Elective	1
Total		16
2nd Semester		
BUS	200 Principles of Management	3
ENG	116 Writing for Business	3
HIM	111 Medical Terminology I	3
HIM	142 Fundamentals of Health Information Systems II	3
MKT	201 Introduction to Marketing	3
³ _____	Social Science Elective	3
Total		18

3rd Semester		
⁴ BUS	125 Applied Business Mathematics	3
BUS	201 Organizational Behavior	3
BUS	241 Business Law I	3
⁵ CST	Elective	3
⁶ ECO	120 Survey of Economics	3
HIM	220 Health Statistics	3
Total		18

4th Semester		
BUS	202 Applied Management Principles or BUS 242 Business Law II	3
BUS	205 Human Resource Management	3
FIN	215 Financial Management	3
HIM	200 Survey of Health Care Administration	3
⁷ _____	Humanities/Fine Arts Elective	3
⁸ PED	116 Lifetime Fitness & Wellness	1
⁸ PED/RPK	Elective	1
Total		17

Total credits for the A.A.S. Degree in Business Management with a Specialization in Healthcare Administration = 69

Check course descriptions in this catalog for requirements regarding placement tests and/or prerequisites.

- ¹ Students may substitute a higher-level math. Consult a faculty advisor for appropriate selection.
- ² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ⁴ Students considering transfer should consult a faculty advisor.
- ⁵ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.
- ⁶ Students considering transfer may take ECO 201 or ECO 202 after consulting a faculty advisor.
- ⁷ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.
- ⁸ 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.

**BUSINESS MANAGEMENT:
INTERNATIONAL BUSINESS SPECIALIZATION**

Associate of Applied Science Degree **AL, AN, LO**

Purpose: This specialization provides knowledge and skills in international business and is designed to prepare students for initial full-time employment or advancement in present employment. The occupational objectives include administrative assistant, branch manager, supervisor, or office manager in an international firm. Careers exist in import-export management for small business and as an international marketing specialist.

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

Two Years		Credits
1st Semester		
ACC	211 Principles of Accounting I	3
BUS	100 Introduction to Business	3
ENG	111 College Composition I	3
¹ MTH	151 Mathematics for the Liberal Arts I	3
² PED	116 Lifetime Fitness & Wellness	1
³ _____	Humanities/Fine Arts Elective	3
⁴ SDV	Elective	1
Total		17

2nd Semester		Credits
ACC	212 Principles of Accounting II	3
BUS	125 Applied Business Math	3
BUS	200 Principles of Management	3
BUS	226 Computer Business Applications or AST 236 Specialized Software Applications or ITE 115 Introduction to Computer Applications & Concepts	3
ENG	112 College Composition II	3
MKT	201 Introduction to Marketing	3
Total		18

3rd Semester		Credits
BUS	202 Applied Management Principles	3
BUS	280 Introduction to International Business	3
⁵ CST	Elective	3
⁶ ECO	120 Survey of Economics Foreign Language	3
Total		15

4th Semester		Credits
BUS	220 Introduction to Business Statistics	3
BUS	241 Business Law I	3
FIN	215 Financial Management	3
FIN	248 International Finance	3
MKT	275 International Marketing	3
² PED/RPK	Elective	1
Total		16

Total credits for the A.A.S. Degree in Business Management with a Specialization in International Business = 66

- ¹ Students may substitute a higher-level math. Consult a faculty advisor for appropriate selection.
- ² 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.
- ³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ⁵ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.
- ⁶ ECO 201 or 202 may be substituted for ECO 120.

BUSINESS MANAGEMENT: PUBLIC MANAGEMENT SPECIALIZATION

Associate of Applied Science Degree **WO**

Purpose: This specialization provides knowledge and skills in public sector management and is designed to prepare students for initial employment or advancement in present employment. The occupational objectives include administrative assistant, management trainee, supervisor, office manager, or manager in local, state, federal, or non-profit organizations.

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

Two Years		Credits
1st Semester		
ACC	211 Principles of Accounting I	3
BUS	100 Introduction to Business	3
ENG	111 College Composition I	3
¹ MTH	151 Mathematics for the Liberal Arts I	3
² PED	116 Lifetime Fitness & Wellness	1
PLS	211 U.S. Government I	3
³ SDV	Elective	1
Total		17
2nd Semester		
ACC	212 Principles of Accounting II	3
BUS	200 Principles of Management	3
ENG	112 College Composition II	3
PBS	100 Intro to Public Administration	3
PBS	105 Personnel Management in the Public Sector	3
PLS	212 U.S. Government II or Elective	3
Total		18
3rd Semester		
BUS	201 Organizational Behavior	3
BUS	202 Applied Management Principles	3
BUS	241 Business Law I	3
⁴ CST	Elective	3
⁵ ECO	120 Survey of Economics	3
⁶ ___	Humanities/Fine Arts Elective	3
Total		18
4th Semester		
BUS	220 Introduction to Business Statistics	3
BUS	226 Computer Business Applications or AST 236 Specialized Software Applications or ITE 115 Introduction to Computer Applications & Concepts	3
PBS	116 Public Budgeting & Finance	3
PBS	240 Constitutional Law	3
⁷ PBS	Elective	3
² PED/RPK	Elective	1
Total		16

**Total credits for the A.A.S. Degree in Business Management
with a Specialization in Public Management = 69**

¹ Students may substitute a higher-level math. Consult a faculty advisor for appropriate selection.

² 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 is offered as both
a 1-credit and a 2-credit course.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.

⁵ ECO 201 or 202 may be substituted for ECO 120.

⁶ Humanities/fine arts elective may be selected from the humanities/
fine arts courses listed under General Education Electives.

⁷ PBS elective may be selected from ACC, CON, BUS, ECO, FIN, ITD,
ITE, ITN, ITP, MKT, PBS, or PLS.

BUSINESS MANAGEMENT: SMALL BUSINESS MANAGEMENT

Certificate **AL, AN, LO, MA, WO, ELI**

Purpose: The one-year certificate program is designed to acquaint present and potential small business owners and employees with the business fundamentals essential to starting a small business.

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

One Year		Credits
1st Semester		
ACC	211 Principles of Accounting I	3
BUS	125 Applied Business Math	3
BUS	241 Business Law I	3
¹ ECO	120 Survey of Economics	3
ENG	111 College Composition I	3
² SDV	Elective	1
Total		16
2nd Semester		
BUS	111 Principles of Supervision I or BUS 201 Organizational Behavior	3
BUS	165 Small Business Management	3
BUS	226 Computer Business Applications or AST 236 Specialized Software Applications or ITE 115 Introduction to Computer Applications & Concepts	3
BUS	242 Business Law II	3
FIN	215 Financial Management	3
MKT	201 Introduction to Marketing	3
Total		18

**Total credits for the Small Business Management
Certificate = 34**

¹ ECO 201 or 202 may be substituted for ECO 120.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

BUSINESS MANAGEMENT: BUSINESS INFORMATION TECHNOLOGY

Career Studies Certificate **AL, AN, LO, MA, WO, ELI**

Purpose: The curriculum is designed to provide the foundations 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 Introduction to Business	3
—	BUS, IT, or AST Elective	3
ITE	115 Introduction to Computer Applications & Concepts	3
¹ ENG/CST	Elective	3
² —	Social Science Elective	3
Total		15

Total credits for the Business Information Technology Career Studies Certificate = 15

¹ The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.

² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

BUSINESS MANAGEMENT: BUSINESS MANAGEMENT PRINCIPLES

Career Studies Certificate **AN, WO, ELI**

Purpose: The program is designed to provide students with business management information and the skills needed to assume higher levels of management responsibility. By providing new job skills, it will benefit workers who are retraining in preparation for a career change.

Recommended Preparation: The student should possess at least a high school proficiency in English.

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 faculty advisor early in their program.

One Year Credits

1st Semester		Credits
BUS	100 Introduction to Business	3
BUS	200 Principles of Management	3
¹ BUS	Elective	3
² ENG	Elective	3
³Total		12

2nd Semester		Credits
BUS	201 Organizational Behavior	3
¹ BUS	Elective	6
³Total		9

3rd Semester		Credits
BUS	241 Business Law I	3
³Total		3

Total credits for the Business Management Principles 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.

¹ Business electives can be chosen from the following approved courses: BUS 165, BUS 202, BUS 242, BUS 265, and BUS 280.

² ENG 111 or ENG 131 is recommended.

³ Courses will be offered in five 8-week sessions (see counselor for details).

BUSINESS MANAGEMENT: DESKTOP PUBLISHING

Career Studies Certificate **AL, WO, ELI**

Purpose: This program is designed to provide the skills and knowledge necessary for students to use desktop publishing techniques and procedures to produce professional looking publications. Employed and inexperienced students as well as graduates of Administrative Support Technology or other programs may update their skills by enrolling in the program.

Recommended Prerequisite: AST 141 Word Processing I or equivalent skills.

One Year Credits

1st Semester		Credits
AST	253 Advanced Desktop Publishing I	3
ENG	116 Writing for Business or ENG Elective	3
SDV	Elective	1
Total		7

2nd Semester		Credits
AST	107 Editing/Proofreading Skills	3
AST	254 Advanced Desktop Publishing II	3
ITE	115 Introduction to Computer Applications & Concepts or AST 236 Special Software Applications or BUS 226 Computer Business Applications	3
Total		9

Total credits for the Desktop Publishing Career Studies Certificate = 16

**BUSINESS MANAGEMENT:
ENTREPRENEURSHIP**Career Studies Certificate **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
1st Semester		
¹ 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
² ENG/CST	Elective	3
Total		15
2nd Semester		
BUS	241 Business Law I	3
BUS	260 Planning for Small Business	3
FIN	260 Financial Management for Small Business	2
MKT	201 Introduction to Marketing	3
Total		11

Total credits for the Entrepreneurship 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.

¹ For students who plan to transfer, ACC 211 is recommended.

² The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.

**BUSINESS MANAGEMENT:
INFORMATION PROCESSING**Career Studies Certificate **AL, WO**

Purpose: The Information Processing career studies certificate is designed to prepare students with computer skills required in a general office. The program includes instruction in the use of text processing, spreadsheets, and database software. Students may wish to pursue this program to meet requirements to qualify for a job, to improve skills in one's current job, or to fulfill personal needs for computerized information processing.

One Year		Credits
1st Semester		
¹ AST	102 Keyboarding II	3
ENG	116 Writing for Business or ENG Elective	3
Total		6
2nd Semester		
¹ AST	141 Word Processing I	3
AST	232 Microcomputer Office Applications or AST 236 Special Software Applications or ITE 115 Introduction to Computer Applications & Concepts	3
Total		6

Total credits for the Information Processing Career Studies Certificate = 12

¹ Prerequisite: AST 101 Keyboarding I or equivalent skills.

**BUSINESS MANAGEMENT:
INTERNATIONAL BUSINESS**Career Studies Certificate **AL, AN, LO, ELI**

Purpose: The International Business career studies certificate is designed to provide information about international business that can be adapted to an administrative staff or line job.

One Year		Credits
1st Semester		
BUS	280 Introduction to International Business	3
¹ ENG/CST	Elective	3
___	Foreign Language	3
² ___	Social Science Elective	3
Total		12
2nd Semester		
FIN	248 International Finance	3
MKT	275 International Marketing	3
² ___	Social Science Elective	3
Total		9

Total credits for the International Business Career Studies Certificate = 21

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

¹ The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.

² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.



BUSINESS MANAGEMENT: LEADERSHIP DEVELOPMENT

Career Studies Certificate **AL, AN, LO, MA, WO, ELI**

Purpose: This certificate in Leadership Development 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 or 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
1st Semester		
BUS	100 Introduction to Business or BUS 200 Principles of Management	3
¹ BUS	111 Principles of Supervision or BUS 201 Organizational Behavior	3
CST	227 Business & Professional Communication or ENG 116 Writing for Business	3
Total		9
2nd Semester		
BUS	117 Leadership Development or BUS 297 Cooperative Education	3
BUS	205 Human Resource Management	3
SDV	Elective	1
Total		7

Total credits for the Leadership Development Career Studies Certificate = 16

¹ For students with minimal work experience, BUS 100 and BUS 111 are recommended. Consult a faculty advisor to make the appropriate choices.

BUSINESS MANAGEMENT: WORD PROCESSING

Career Studies Certificate **AL, AN, WO**

Purpose: The Word Processing career studies certificate is designed to prepare students with computer skills for text processing for initial employment in word processing positions, for job advancement, or for personal needs.

One Year		Credits
1st Semester		
¹ AST	141 Word Processing I	3
ENG	116 Writing for Business or ENG Elective	3
Total		6
2nd Semester		
AST	142 Word Processing II	3
AST	257 Word Processing Desktop Pub.	3
Total		6

Total credits for the Word Processing Career Studies Certificate = 12

¹ Prerequisite: AST 101 Keyboarding I or equivalent skills.

COMMUNICATION DESIGN

Associate of Applied Science Degree **AL, LO**

Purpose: The curriculum is designed for persons who seek full-time employment in the communication design field. The occupational objectives include graphic designer in the communication design marketplace.

Recommended Preparation: Proficiency in high school English and a satisfactory aptitude for drawing.

Equipment and Supplies: Communication 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 (Introduction to Graphic Skills) and can be used throughout the two-year program.

Two Years		Credits
1st Semester		
ART	121 Drawing I	4
ART	131 Fundamentals of Design I	4
ART	140 Introduction to Graphic Skills	4
ENG	111 College Composition I	3
¹ PED	116 Lifetime Fitness & Wellness	1
² SDV	Elective	1
Total		17
2nd Semester		
ART	122 Drawing II	4
ART	132 Fundamentals of Design II	4
ART	135 Visual Communications	4
ART	141 Typography I	4
Total		16
3rd Semester		
ART	142 Typography II	4
ART	217 Electronic Graphic Design I	4
ART	265 Graphic Techniques	4
PHT	101 Photography I or PHT 270 Digital Imaging I or ART 251 Communication Design I	3
³ MTH	151 Math for Liberal Arts I or Laboratory Science Elective	3
Total		18
4th Semester		
ART	218 Electronic Graphic Design II	4
ART	250 History of Design	3
ART	287 Portfolio & Resume Preparation	1
CST	110 Introduction to Communication	3
¹ PED/RPK	Elective	1
⁴ ___	Social Science Elective	3
⁴ ___	Social Science Elective	3
Total		18

Total credits for the A.A.S. Degree in Communication Design = 69

¹ 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.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

³ Division approval required for substitution. The laboratory 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.

⁴ The social science elective may be selected from the social behavioral sciences courses listed under General Education Electives.



COMMUNICATION DESIGN: INTERACTIVE DESIGN SPECIALIZATION

Associate of Applied Science Degree **AL, LO**

Purpose: The curriculum is designed for persons 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.

Recommended Preparation: Proficiency in high school English and a satisfactory aptitude for drawing.

Equipment and Supplies: Communication 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 (Introduction to Graphic Skills) and can be used throughout the two-year program.

Two Years		Credits
1st Semester		
ART	121 Drawing I	4
ART	131 Fundamentals of Design I	4
ART	140 Introduction to Graphic Skills	4
ENG	111 College Composition I	3
¹ SDV	Elective	1
Total		16
2nd Semester		
ART	116 Design for the Web I	3
ART	122 Drawing II	4
ART	132 Fundamentals of Design II	4
ART	135 Visual Communications	4
² PED	116 Lifetime Fitness and Wellness	1
Total		16
3rd Semester		
ART	141 Typography I	4
ART	263 Interactive Design I	4
³ MTH	151 Math for Liberal Arts I or Laboratory Science Elective	3
PHT	270 Digital Imaging I or ART 251 Communication Design I	3
² PED/RPK	Elective	1
⁴ _____	Social Science Elective	3
Total		18
4th Semester		
ART	142 Typography II	4
ART	250 History of Design	3
ART	264 Interactive Design II	4
ART	287 Portfolio and Resume Preparation	1
CST	110 Introduction to Communication	3
⁴ _____	Social Science Elective	3
Total		18

Total Credits for the A.A.S. Degree in Communication Design with a Specialization in Interactive Design = 68

¹ Students can take SDV 100 College Success Skills or SDV 101 Orientation section related to their particular program.

² 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.

³ Division approval required for substitution. The laboratory 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..

⁴ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

COMMUNICATION DESIGN: MULTIMEDIA DESIGN

Certificate **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. Upon successful completion, the program prepares students to work as visual communicators in the field of multimedia production.

One Year		Credits
1st Semester		
ART	121 Drawing I	4
ART	130 Introduction to Multimedia	4
ART	131 Fundamentals of Design I	4
ENG	111 College Composition I	3
¹ SDV	Elective	1
Total		16
2nd Semester		
ART	150 History of Film and Animation	3
ART	203 Animation I	4
ART	207 3-D Model Rendering	4
² _____	Social Science Elective	3
Total		14
3rd Semester		
ART	208 Video Techniques	4
ART	230 Multimedia II or ART 204 Animation II	4
Total		8

Total credits for a Certificate in Multimedia Design = 38

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

COMMUNICATION DESIGN: WEB DESIGN SPECIALIST

Career Studies Certificate **AL, LO**

Purpose: This curriculum provides students with the aesthetic and technical knowledge required for the creation of well-designed and organized World Wide Web sites.

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
Total		7
2nd Semester		
ART	Design for the Web II	3
ART	251 Communication Design I	3
Total		6



3rd Semester		
ART	190 Coordinated Internship or ART 130 Multimedia or ART 140 Graphic Skills or ART 203 Animation	3-4
ART	220 Advanced Design for the Web	3
Total		6-7

Total credits for the Web Design Specialist 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.

COMPUTER AND ELECTRONICS TECHNOLOGY

Associate of Applied Science Degree **AN**

Purpose: This curriculum is designed to prepare persons for employment in the computer, telecommunications, and other industries with a significant electronics component. Occupational objectives include entry-level opportunities in the computer, telecommunications, radio and television, electronics, metrology, and industrial control fields with positions involving activities such as research and development, laboratory support, electronics equipment fabrication or repair, and field test support.

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 faculty advisor early in their program.

Recommended Preparation: Successful completion of high school algebra and geometry.

Two Years Credits

1st Semester		
ENG	111 College Composition I	3
ETR	113 DC & AC Fundamentals I	4
ETR	167 Logic Circuits and Systems I	4
MTH	166 Precalculus with Trigonometry	5
¹ PED	116 Lifetime Fitness & Wellness	1
² SDV	Elective	1
Total		18

2nd Semester		
ENG	115 Technical Writing or ENG 112 College Composition II	3
ETR	107 Programming Appl. for ELE/ETR Calculations	4
ETR	114 DC & AC Fundamentals II	4
ETR	144 Devices & Applications II	4
³ MTH	271 Applied Calculus I	3
Total		18

3rd Semester		
⁴ CST	Elective	3
ETR	250 Solid State Circuits	4
ETR	285 Fundamentals of Microcomputer Repair or ITN 107 Personal Computer Hardware and Troubleshooting	4-3
¹ PED/RPK	Elective	1
⁵ _____	Social Science Elective	3
Total		14-15

4th Semester		
ITN	101 Introduction to Network Concepts	3
ETR	261 Microprocessor Application I or ETR 159 Microcomputer Peripherals	4
⁶ _____	Humanities/Fine Arts Elective	3
PHY	201 College Physics I	4
⁵ _____	Social Science Elective	3
Total		17

Total credits for the A.A.S. Degree in Computer and Electronics Technology = 67-68

¹ 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.

² Students can take SDV 100 College Success Skills or the SDV 101
Orientation section related to their particular program.

³ MTH 173 may be substituted for MTH 271.

⁴ The CST elective may be selected from the following: CST 100, 110,
115, 126, 227 or 229.

⁵ The social science elective may be selected from the
social/behavioral sciences courses listed under General
Education Electives.

⁶ Humanities/fine arts elective may be selected from the humanities/
fine arts courses listed under General Education Electives.

COMPUTER AND ELECTRONICS TECHNOLOGY: ELECTRONICS TECHNICIAN

Certificate **AN**

Purpose: The purpose of this certificate is to prepare graduates for entry-level employment in the field of electronics. Occupational objectives include test technician, assembler, prototype fabricator, and electronics draftsman. Students completing the certificate may continue their education toward the A.A.S. degree in Electronics. Persons with experience in the field who are seeking formal training, or who might wish to explore a career in electronics, may enroll in this certificate program.

Recommended Preparation: Successful completion of high school algebra and geometry.

One Year Credits

1st Semester		
ENG	111 College Composition I	3
ETR	113 DC and AC Fundamentals I	4
ETR	167 Logic Circuits and Systems	4
MTH	166 Precalculus with Trigonometry or MTH 173 Calculus w/Analytic Geometry I	5
¹ SDV	Elective	1
Total		17

2nd Semester		
ETR	107 Programming Applications for ELE/ETR Calculations	4
ETR	114 DC and AC Fundamentals II	4
ETR	144 Devices and Applications	4
PHY	201 College Physics I	4
Total		16

Total credits for the Electronics Technician Certificate = 33

¹ Students can take SDV 100 College Success Skills or the SDV 101
Orientation section related to their particular program.



COMPUTER SCIENCE

Associate of Science Degree **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 the 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 requirements of 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
1st Semester		
CSC	130 Scientific Programming	3
ENG	111 College Composition I	3
MTH	173 Calculus with Analytic Geom. I	5
¹ ___	Social Science Elective	3
² SDV	Elective	1
Total		15
2nd Semester		
* CSC	185 Programming Tools	1
CSC	201 Computer Science I	4
³ ENG	112 College Composition II	3
⁴ MTH	174 Calculus with Analytic Geom. II	5
¹ ___	Social Science Elective	3
Total		16
3rd Semester		
CSC	202 Computer Science II	4
CST	110 Intro to Communication	3
⁵ ___	Natural Science/Lab Elective	4
⁶ PED	116 Lifetime Fitness & Wellness	1
¹ ___	Social Science Elective	3
Total		15

4th Semester		
CSC	205 Computer Organization	3
⁷ ___	Humanities/Fine Arts Elective	3
⁷ ___	Humanities/Fine Arts Elective	3
⁵ ___	Natural Science/Lab Elective	4
⁶ PED/RPK	Elective	1
Total		14

Total credits for the A.S. Degree in Computer Science = 60

* Students who completed CSC 100 prior to fall 2009 do not need to take CSC 185.

¹ The social science elective may be selected from the social/behavioral sciences 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.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

³ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁴ The following courses are not required to complete the A.S. degree; however, a baccalaureate degree in Computer Science requires more mathematics courses than are listed in this program. Depending upon the requirements of the transfer institution, students may enhance their preparation for transfer by taking MTH 286 Discrete Mathematics, MTH 241 Probability and Statistics I, and/or MTH 285 Linear Algebra.

⁵ The science elective may be selected from biology, chemistry (excluding CHM 101–102), physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.

⁶ 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.

⁷ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.



CONSTRUCTION MANAGEMENT TECHNOLOGY

Associate of Applied Science Degree **AL**

Purpose: The curriculum is designed to qualify personnel in both engineering technology and management for employment in all areas of a construction firm. Occupational objectives include engineering aide, construction project manager, construction supervisor, estimator, and facilities planning and supervision.

Two Years Credits

1st Semester		
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
¹ SDV	Elective	1
Total		18

2nd Semester		
BLD	102 Construction Management II	3
BLD	232 Construction Estimating II	3
CAD	201 Computer Aided Drafting and Design I	4
² ___	Humanities/Fine Arts Elective	3
³ MTH	115 Technical Mathematics I	3
⁴ PED	116 Lifetime Fitness & Wellness	1
Total		17

3rd Semester		
ARC	133 Construction Methodology & Procedures I	3
ARC	225 Site Planning and Technology	3
BLD	241 Construction Management III	3
⁵ ENG	115 Technical Writing	3
⁴ PED/RPK	Elective	1
⁶ ___	Social Science Elective	3
Total		16

4th Semester		
ARC	134 Construction Methodology & Procedures II	3
ARC	243 Environmental Systems or ⁷ Technical Elective	4
BLD	242 Construction Management IV	3
BLD	247 Construction Planning & Scheduling	3
⁸ CST	Elective	3
Total		16

Total credits for the A.A.S. Degree in Construction Management Technology = 67

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

³ Students transferring to a four-year college or university should consider taking MTH 163, 3 cr.; MTH 166, 5 cr.; or MTH 173, 5 cr. in lieu of MTH 115.

⁴ 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.

⁵ Students transferring to a four-year college or university should consider taking ENG 112 in lieu of ENG 115.

⁶ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. Students planning to transfer to a four-year degree program should consider taking HIS 102.

⁷ Technical elective courses must be approved by the program faculty advisor. Technical electives may be selected from the following: EGR 115, EGR 206, CIV 225, CIV 228, ARC 134, CAD 202, BLD 102 or BLD 247.

⁸ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.

CONSTRUCTION MANAGEMENT TECHNOLOGY: CONSTRUCTION SUPERVISION

Career Studies Certificate **AL**

Purpose: The curriculum is designed to qualify personnel in both building construction and engineering technologies. Occupational objectives 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
CIV	171 Surveying I	3
Total		14

2nd Semester		
ARC	133 Construction Methodology & Procedures I	3
BLD	232 Construction Estimating II	3
CAD	201 Computer Aided Drafting and Design I	4
ENG	111 College Composition I	3
¹ ___	Technical Elective	2
Total		15

Total credits for the Construction Supervision 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.

¹ Technical elective courses must be approved by the program faculty advisor. Technical electives may be selected from the following: EGR 115, EGR 206, CIV 225, CIV 228, ARC 134, DRF 202, BLD 102 or BLD 247.



CONTRACT MANAGEMENT

Associate of Applied Science Degree **AL, WO**

Purpose: This curriculum is designed for persons who plan to seek employment in contract management positions and for those presently in contract management positions who seek career advancement. The agreement NOVA has with Defense Acquisition University creates opportunities to train contract management personnel for 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. Occupational objectives 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 faculty 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
¹ ECO	120 Survey of Economics	3
ENG	111 College Composition I	3
ITE	115 Introduction to Computer Applications & Concepts	3
² MTH	151 Mathematics for the Liberal Arts I	3
³ SDV	Elective	1
Total		16
2nd Semester		
CON	110 Contract Support Planning	3
CON	120 Strategic Focused Contracting I	3
CST	110 Introduction to Communication	3
ENG	112 College Composition II	3
⁴ PED	116 Lifetime Fitness & Wellness	2
⁵ ___	Social Science Elective	3
Total		17
3rd Semester		
ACC	211 Principles of Accounting I	3
BUS	200 Principles of Management	3
CON	111 Contract Strategy Execution	3
CON	214 Business Decisions for Contracting	3
CON	215 Intermediate Contracting Support	3
⁶ ___	Humanities/Fine Arts Elective	3
Total		18

4th Semester

ACC	212 Principles of Accounting II	3
BUS	220 Introduction to Business Statistics	3
CON	112 Contract Performance Assessment I	3
CON	216 Legal Considerations in Contracting	3
CON	217 Cost Analysis and Negotiation Techniques	3
CON	218 Advanced Contracting Support	3
Total		18

Total credits for the A.A.S. Degree in Contract Management = 69

¹ ECO 201 or 202 may be substituted for ECO 120.

² Students may substitute a higher-level math. Consult a faculty advisor for appropriate selection.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ 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.

⁵ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. PLS 211, U.S. Government I is recommended.

⁶ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

CONTRACT MANAGEMENT

Certificate **AL, WO**

Purpose: The certificate curriculum in Contract Management is designed for students desiring 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	110 Contract Support Planning	3
CON	111 Contract Strategy Execution	3
CON	112 Contract Performance Assessment I	3
ENG	111 College Composition I	3
¹ SDV	Elective	1
Total		16
2nd Semester		
CON	120 Strategic Focused Contracting I	3
CON	214 Business Decisions for Contracting	3
CON	215 Intermediate Contracting Support	3
CON	216 Legal Considerations in Contracting	3
CON	217 Cost Analysis and Negotiation Techniques	3
CON	218 Advanced Contracting Support	3
Total		18

Total credits for the Contract Management Certificate = 34

¹ Students can take SDV 100 College Success Skills or SDV 101 Orientation section related to their particular program.

CONVENTION MANAGEMENT

See Hospitality Management

CULINARY ARTS CERTIFICATE

See Hospitality Management

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

DESKTOP PUBLISHING CAREER STUDIES CERTIFICATE

See Business Management

DIAGNOSTIC IMAGING

See Medical Education: Radiography

DIAGNOSTIC MEDICAL SONOGRAPHY A.A.S.

See Medical Education

DIESEL MECHANICS TECHNOLOGY CAREER STUDIES CERTIFICATE

See Automotive Technology

DRAFTING SPECIALIZATION

See Architectural Drafting or
Civil Engineering Technology: Drafting Specialization

DRIVERS EDUCATION

Career Studies Certificate **MA**

Purpose: This career studies certificate is designed for students who wish to become qualified teachers of drivers education or maintain qualifications in the state of Virginia.

One Semester	Credits
¹ CST/ENG Elective	3
² EDU 114 Driver Task Analysis	3
² EDU 214 Instructional Principles of Driver Education	3
Total	9

Total credits for Drivers Education Career Studies Certificate = 9

¹ The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100 or 110.

² These classes are taught in eight-week sessions.

EARLY CHILDHOOD DEVELOPMENT

Associate of Applied Science Degree **AL, LO, MA**

Purpose: The curriculum is designed for persons 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. Occupational opportunities include program leaders, supervisors, and/or directors in child development programs.

Two Years Credits

1st Semester		
CHD	118 Language Arts for Young Children	3
CHD	120 Introduction to Early Childhood Education	3
CHD	145 Teaching Art, Music and Movement to Children	3
ENG	111 College Composition I	3
PSY	235 Child Psychology	3
¹ SDV	Elective	1
Total		16

2nd Semester		
CHD	119 Introduction to Reading Methods	3
CHD	165 Observation/Participation/ Early Childhood/Primary Settings	3
CHD	166 Infant and Toddler Programs	3
CHD	205 Guiding the Behavior of Children	3
ENG	112 College Composition II	3
² PED/RPK	Elective	1
² PED	116 Lifetime Fitness & Wellness	1
Total		17

3rd Semester		
CHD	146 Math, Science, Social Studies for Children	3
CHD	210 Introduction to Exceptional Children	3
CHD	215 Models of Early Childhood Education Programs	3
CHD	216 Early Childhood Programs, Schools and Social Change	3
EDU	235 Health, Safety, and Nutrition Education	3
³ _____	Humanities/Fine Arts elective	3
Total		18

4th Semester		
CHD	265 Advanced Observation/Participation/ Early Childhood/Primary Settings	3
CHD	270 Administration of Child Care Programs	3
CHD	298 Seminar and Project (Portfolio)	1
CST	100 Principles of Public Speaking	3
⁴ MTH	151 Math for Liberal Arts or Laboratory Science Elective	3-4
⁵ _____	Social Science Elective	3
Total		16-17

Total credits for the A.A.S. Degree in Early Childhood Development = 67

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² 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.

³ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

⁴ The laboratory 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.

⁵ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.



EARLY CHILDHOOD DEVELOPMENT: PARAPROFESSIONAL SPECIALIZATION

Associate of Applied Science Degree **AL, LO, MA**

Purpose: The curriculum is designed to prepare prospective and practicing paraprofessionals (Assistant Teachers, Instructional Assistants, and Public Health Training Assistants) to assist in public or private school classroom instruction. This specialization provides knowledge and skills for those paraprofessionals giving supportive instruction to school-age children.

Two Years Credits

1st Semester

CHD	118 Language Arts for Young Children	3
CHD	120 Introduction to Early Childhood Education	3
CHD	145 Teaching Art, Music, and Movement to Children	3
ENG	111 College Composition I	3
PSY	235 Child Psychology	3
¹ SDV	Elective	1
Total		16

2nd Semester

CHD	119 Introduction to Reading Methods	3
CHD	165 Observation/Participation in Early Childhood/Primary Settings	3
CHD	225 Curriculum Development for School-Age Child Care	3
CHD	230 Behavior Management for School-Age Child Care	3
ENG	112 College Composition II	3
² PED	116 Lifetime Fitness & Wellness	1
² PED/RPK	Elective	1
Total		17

3rd Semester

CHD	146 Math, Science, and Social Studies for Children	3
CHD	210 Introduction to Exceptional Children	3
CHD	216 Early Childhood Programs, School, and Social Change	3
EDU	225 Audiovisual Materials and Computer Software	3
EDU	235 Health, Safety and Nutrition Education	3
³ ___	Humanities/Fine Arts Elective	3
Total		18

4th Semester

CHD	265 Advanced Observation/Participation in Early Childhood/Primary Settings	3
CHD	270 Administration of Child Care Programs	3
CHD	298 Seminar and Project (Portfolio)	1
CST	100 Principles of Public Speaking	3
⁴ MTH	151 Math for Liberal Arts I or Laboratory Science Elective	3-4
⁵ ___	Social Science Elective	3
Total		16-17

Total credits for the A.A.S. Degree in Early Childhood Development with a Paraprofessional Specialization = 67-68

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² 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.

³ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

⁴ The laboratory 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.

⁵ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

EARLY CHILDHOOD DEVELOPMENT

Certificate

AL, LO, MA

Purpose: The curriculum is designed to prepare individuals for employment in environments where the care and education of young children is the primary focus. Occupational opportunities include employment in child development programs and family child care homes and before and after school-age programs.

One Year Credits

1st Semester

CHD	118 Language Arts for Young Children or CHD 119 Introduction to Reading Methods*	3
CHD	120 Introduction to Early Childhood Education	3
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
¹ SDV	Elective	1
Total		16

2nd Semester

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
CHD	216 Early Childhood Programs, School, and Social Change or CHD 210 Introduction to Exceptional Children*	3
PSY	235 Child Psychology	3
Total		15

Total credits for the Early Childhood Development Certificate = 31

*Students preparing to work with school-age children should take these courses.

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

EARLY CHILDHOOD DEVELOPMENT

Career Studies Certificate

AL, LO, MA

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. The program also meets the requirements for the Virginia Early Childhood Development Certificate (VECD), which has been approved by the national office of Head Start to meet credentialing requirements. Students wishing to earn the VECD certificate are required to take CHD 167: Resource File, as well as complete additional components and documentation as required by VA DSS. Occupational 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 Introduction to Early Childhood Education	3
CHD	145 Teaching Art, Music, and Movement to Children	3
CHD	205 Guiding the Behavior of Children	3
SDV	Elective	1
Total		10
2nd Semester		
CHD	165 Observation and Participation in Early Childhood/Primary Settings	3
EDU	235 Health, Safety and Nutrition Education	3
¹ CHD	167 CDA Theories and Applications: Resource File or Elective	3
Total		9

Total credits for the Early Childhood Development Career Studies Certificate = 19

¹ Students who will use this credential to satisfy national Head Start requirements will enroll in CHD 167 to prepare a portfolio to submit to VA DSS for evaluation. Students not using this program in that way may choose any other 3 credit general education or program-specific course which will help meet requirements for the Early Childhood Development certificate and ultimately the AAS degree.

EARLY CHILDHOOD DEVELOPMENT: INFANT AND TODDLER CARE

Career Studies Certificate **AL, LO, MA**

Purpose: The curriculum is designed to prepare individuals to create developmentally appropriate learning environments for infants and toddlers. This certificate also meets the requirements for the Virginia Infant Toddler Certificate (VIT), which has been approved by the national office of Head Start to meet credentialing requirements. Students wishing to earn the VIT certificate are required to take CHD 167: Resource File, as well as, complete additional components and documentation as required by VA DSS. Occupational opportunities include employment in child development programs and family child care homes.

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 Introduction to Early Childhood Education	3
CHD	166 Infant and Toddler Programs	3
EDU	235 Health Safety and Nutrition Education	3
SDV	Elective	1
Total		10
2nd Semester		
CHD	164 Working with Infants and Toddlers in Inclusive Settings	3
CHD	165 Observation/Participation in Early Childhood/Primary Settings	3
¹ CHD	167 CDA Theories and Applications: Resource File or Elective	3
Total		9

Total credits for the Infant and Toddler Care Career Studies Certificate = 19

¹ Students who will use this credential to satisfy national Head Start requirements will enroll in CHD 167 to prepare a portfolio to submit to VA DSS for evaluation. Students not using this credential in that way may choose any other general education or program specific 3 credit course that will help meet requirements for the Early Childhood Development certificate.

EARLY CHILDHOOD DEVELOPMENT: PARAPROFESSIONAL TEACHER ASSISTANT

Career Studies Certificate **AL, LO, MA**

Purpose: The curriculum is designed to prepare prospective and practicing paraprofessionals (Assistant Teachers, Instructional Assistants, and Public Health Training Assistants) to assist in public and private school classroom instruction.

One Year		Credits
1st Semester		
CHD	119 Introduction to Reading Methods	3
ENG	111 English Composition I	3
SDV	Elective	1
Total		7
2nd Semester		
MTH	151 Math for the Liberal Arts I	3
CHD	146 Math, Science and Social Studies for Children	3
CHD	210 Introduction to Exceptional Children	3
Total		9

Total credits for the Paraprofessional Teacher Assistant Career Studies Certificate = 16

ECHOCARDIOGRAPHY SPECIALIZATION

See Medical Education: Diagnostic Medical Sonography

EMERGENCY MEDICAL SERVICES

See Medical Education



ENGINEERING

Associate of Science Degree AN

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 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
1st Semester		
CHM	111 College Chemistry I	4
EGR	120 Introduction to Engineering	2
ENG	111 College Composition I	3
MTH	173 Calculus with Analytic Geom. I	5
¹ SDV	Elective	1
² ____	Social Science Elective	3
Total		18
2nd Semester		
EGR	126 Computer Programming for Engineers	3
³ ENG	112 College Composition II	3
MTH	174 Calculus with Analytic Geom. II	5
⁴ PED	116 Lifetime Fitness & Wellness	1
PHY	231 General University Physics I	5
Total		17
3rd Semester		
⁵ CST	Elective	3
EGR	240 Solid Mechanics (Statics)	3
____	Humanities/Fine Arts Elective	3
MTH	277 Vector Calculus	4
⁴ PED/RPK	Elective	1
² ____	Social Science Elective	3
Total		17
4th Semester		
⁷ EGR	Elective	2-3
EGR	245 Engineering Mechanics - Dynamics	3
⁸ EGR	246 Mechanics of Materials	3
⁶ ____	Humanities/Fine Arts Elective	3
PHY	232 General University Physics II	5
Total		16-17

Total credits for the A.S. Degree in Engineering = 68-69

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

³ ENG 125 may be substituted with the advice of a counselor or

faculty advisor according to requirements of transfer institutions.

⁴ 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.

⁵ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.

⁶ Humanities/fine arts electives may be selected from the humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

⁷ EGR 206 (2 credits) required at Va. Tech and desirable elsewhere.

⁸ EGR 251 can be substituted for EGR 246.

⁹ MTH 292 not recommended for students who plan to transfer to GMU.

The following courses are not required for the A.S. degree; however, completion of them may be desirable for transfer as a junior in Engineering. Consult the requirements of your transfer institution.

CHM	112 College Chemistry II	4
⁷ EGR	Elective	2-3
MTH	285 Linear Algebra	3
MTH	291 Differential Equations	3
⁹ MTH	292 Topics in Differential Equations	3

ENGINEERING: ELECTRICAL ENGINEERING SPECIALIZATION

Associate of Science Degree AN

Purpose: The curriculum is designed to permit the student to transfer into a baccalaureate degree program in Electrical Engineering (EE). All B.S.E.E. degree-granting colleges/universities require specific preparation in the sophomore year for EE majors.

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 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, and 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
1st Semester		
CHM	111 College Chemistry I	4
EGR	120 Introduction to Engineering	2
ENG	111 College Composition I	3
MTH	173 Calculus/Analytic Geometry I	5
¹ PED	116 Lifetime Fitness & Wellness	1
² SDV	Elective	1
Total		16
2nd Semester		
³ EGR	126 Computer Programming for Engineers	3
⁴ ENG	112 College Composition II	3
MTH	174 Calculus/Analytic Geometry II	5
PHY	231 General University Physics I	5
Total		16



3rd Semester		
⁵ CST	Elective	3
⁶ EGR	240 Solid Mechanics (Statics)	3
EGR	251 Basic Electric Circuits I	3
MTH	277 Vector Calculus	4
¹ PED/RPK	Elective	1
⁷ _____	Social Science Elective	3
Total		17

4th Semester		
EGR	252 Basic Electric Circuits II	3
EGR	255 Electric Circuits Laboratory	1
⁸ _____	Humanities/Fine Arts Elective	6
PHY	232 General University Physics II	5
⁷ _____	Social Science Elective	3
Total		18

Total credits for the A.S. Degree in Engineering with a Specialization in Electrical Engineering = 67

- ¹ 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.
- ² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ³ CSC 201 should be substituted for EGR 126 for transfer to GMU.
- ⁴ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.
- ⁵ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.
- ⁶ EGR 265 may be substituted for EGR 240.
- ⁷ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ⁸ Humanities/fine arts electives may be selected from the humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

The following courses are not required for the Electrical Engineering Specialization; however, completion of them may be desirable for transfer as a junior in Engineering. Consult the requirements of your transfer institution.

⁹ EGR	Elective	2-3
EGR	265 Digital Elec. & Logic Design	4
MTH	285 Linear Algebra	3
MTH	291 Differential Equations	3
¹⁰ MTH	292 Topics in Differential Equations	3

- ⁹ EGR 206 (2 credits) required at Va. Tech and desirable elsewhere. EGR 266 is required for EE curriculum at most universities.
- ¹⁰ MTH 292 not recommended for students who plan to transfer to GMU.

ENGINEERING TECHNOLOGY

Associate of Applied Science **AL, AN**

Purpose: This curriculum is designed to prepare students for employment in Civil Engineering, Mechanical Engineering, or Drafting technology fields.

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 faculty advisor early in their program.

Two Years Credits

1st Semester		
ARC	123 Architectural Graphics I	3
¹ CIV	171 Surveying I	3
ENG	111 College Composition I	3
ETR	106 Basic Prog. Applied to Electrical/Electronic Calculations or CSC 110 Introduction to Computing	2-3
² PED	116 Lifetime Fitness & Wellness	1
³ _____	Social Science Elective	3
⁴ SDV	Elective	1
Total		16-17

2nd Semester		
ARC	133 Construction Methodology & Procedures I	3
CAD	201 Computer Aided Drafting and Design I	4
⁵ MEC	112 Processes of Industry	3
⁶ MTH	166 Precalculus with Trigonometry	5
² PED/RPK	Elective	1
Total		16

3rd Semester		
¹ CIV	210 Structural Systems	5
⁷ CST	Elective	3
EGR	115 Engineering Graphics	2
EGR	130 Statics and Strength of Materials	5
⁸ _____	Humanities/Fine Arts Elective	3
Total		18

4th Semester		
ARC	124 Architectural Graphics II	3
CAD	140 Technical Drawing	3
CAD	202 Computer Aided Drafting and Design II	4
⁵ MEC	118 Automated Manufacturing Technology	3
⁹ PHY	201 General College Physics I	4
Total		17

Total credits for the A.A.S. Degree in Engineering Technology = 67-68

- ¹ CIV classes are offered only on the Alexandria campus.
- ² 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 205, 216 or 225. PED 116 is offered as both a 1-credit and a 2-credit course.
- ³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. Students planning to transfer should consider taking HIS 101-102 or HIS 111-112.
- ⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ⁵ MEC courses are offered only on the Annandale campus.
- ⁶ MTH 163-164, Precalculus I-II, may be substituted for MTH 166.
- ⁷ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.
- ⁸ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.
- ⁹ Individuals planning to transfer to a Mechanical Engineering Technology baccalaureate program should take PHY 201-202.



ENGINEERING TECHNOLOGY: CIVIL ENGINEERING TECHNOLOGY SPECIALIZATION

Associate of Applied Science **AL**

Purpose: This curriculum is designed to prepare students for either employment in civil engineering or the construction industry as a technician or to provide a broad foundation for those individuals who wish to continue their education. Specialization is achieved through the selection of courses for the technical elective requirement. Graduates may seek employment as civil, structural, land planning CAD operators and civil or construction engineering technicians.

Two Years Credits

1st Semester

CAD	201 Computer Aided Drafting and Design I	4
¹ CIV	171 Surveying I	3
EGR	115 Engineering Graphics or CAD 165 Architectural Blue-Print Reading	2-3
CSC	110 Introduction to Computing	3
ENG	111 College Composition I	3
² PED	116 Lifetime Fitness & Wellness	1
³ SDV	Elective	1
Total		17-18

2nd Semester

CAD	202 Computer Aided Drafting and Design II	4
¹ CIV	172 Surveying II	3
¹ CIV	225 Soil Mechanics	2
¹ CIV	226 Soil Mechanics Laboratory	1
⁴ MTH	166 Precalculus with Trigonometry	5
⁵ _____	Social Science Elective	3
Total		18

3rd Semester

ARC	124 Architectural Graphics II or CAD 203 Computer Aided Drafting and Design III (Land Development Desktop)	3
ARC	133 Construction Methodology & Procedures I	3
CAD	260 Computer Applications for Surveyors and Technicians (Land Development Desktop)	3
EGR	130 Statics & Strength of Materials or ⁶ Technical Elective	5
² PED/RPK	Elective	1
Total		15

4th Semester

ARC	225 Site Planning & Technology	3
¹ CIV	210 Structural Systems or ⁵ Technical Elective	5
¹ CIV	228 Concrete Technology	2
¹ CIV	229 Concrete Lab	1
⁷ CST	Elective	3
⁸ _____	Humanities/Fine Arts Elective	3
Total		17

Total credits for the A.A.S. Degree in Engineering Technology with a Specialization in Civil Engineering Technology = 67-68

¹ CIV classes are offered only on the Alexandria Campus.

² 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 205, 216 or 225. PED 116 is offered
as both a 1-credit and a 2-credit course.

³ Students can take SDV 100 College Success Skills or the SDV 101
Orientation section related to their particular program.

⁴ MTH 163-164, Precalculus I-II, may be substituted for MTH 166.

⁵ The social science elective may be selected from the social/
behavioral sciences courses listed under General Education
Electives. Students planning to transfer should consider taking
HIS 101-102 or HIS 111-112.

⁶ Technical elective must be approved by faculty advisor. Acceptable
courses include ARC 200, ART 121, BLD 231, CAD 195/295,
CAD 233, or HRT 246.

⁷ The CST elective may be selected from the following: CST 100, 110,
115, 126, 227 or 229.

⁸ Humanities/fine arts elective may be selected from the humanities/
fine arts courses listed under General Education Electives.

ENGINEERING TECHNOLOGY: DRAFTING SPECIALIZATION

Associate of Applied Science **AL, AN**

Purpose: This curriculum is designed to provide individuals with skills, knowledge, and techniques to obtain employment as a drafter in any of the many architectural or engineering firms and other organizations requiring drafting and design professionals. This degree offers a broad range of drafting experiences. With technical electives each individual is offered the opportunity to emphasize a particular drafting area of interest.

Internships are available through Cooperative Education and students are encouraged to participate to complement academic preparation.

Two Years Credits

1st Semester

ARC	123 Architectural Graphics I	3
CSC	110 Introduction to Computing or ETR 106 Basic Program Applied to Electrical/ Electronic Calculations	2-3
¹ CST	Elective	3
ENG	111 College Composition I	3
² MTH	166 Precalculus with Trigonometry	5
³ SDV	Elective	1
Total		17-18

2nd Semester

ARC	124 Architectural Graphics II	3
CAD	201 Computer Aided Drafting and Design I	4
⁴ PED	116 Lifetime Fitness & Wellness	1
⁴ PED/RPK	Elective	1
⁵ _____	Social Science Elective	3
⁶ _____	Technical Elective	2
⁶ _____	Technical Elective	3
Total		17

3rd Semester

ARC	133 Construction Methodology & Procedures I	3
CAD	202 Computer Aided Drafting and Design II	4
EGR	115 Engineering Graphics	2
EGR	130 Statics & Strength of Materials	5
⁷ _____	Humanities/Fine Arts Elective	3
Total		17

4th Semester

⁸ CIV	171 Surveying I	3
^{6,8} CIV	210 Structural Systems or Tech. Elec.	4-5
⁹ MEC	118 Automated Manufacturing Tech.	3
⁶ _____	Technical Elective	3
⁶ _____	Technical Elective	3
Total		16-17

Total credits for the A.A.S. Degree in Engineering Technology with a Specialization in Drafting = 67-69

¹ The CST elective may be selected from the following: CST 100, 110,
115, 126, 227 or 229.

² MTH 163-164, 6 cr., may be substituted for MTH 166.



² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ 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.

⁵ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. Students planning to transfer should consider taking HIS 101–102 or HIS 111–112.

⁶ Technical electives may be selected from ARC, CIV, CAD, or ETR prefixes. MEC 210 (which is offered only on Annandale Campus) may also be selected.

⁷ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

⁸ CIV courses are offered only on the Alexandria campus.

⁹ MEC 118 is offered only on the Annandale campus.

ENGINEERING TECHNOLOGY: MECHANICAL ENGINEERING TECHNOLOGY SPECIALIZATION

Associate of Applied Science

AN

Purpose: This curriculum is designed to prepare the student for employment as a mechanical engineering technician or for transfer to a four-year college to seek a bachelor's degree. Students who intend to transfer to a four-year degree program must see a faculty advisor prior to selecting courses. Occupational objectives include mechanical draftsman, engineering technician, research and development technician, engineering equipment inspector, engineering plant operator or estimator.

Two Years

Credits

1st Semester

CSC	110 Introduction to Computing or ETR 106 Basic Program Applied to Electrical/ Electronic Calculations	2–3
EGR	115 Engineering Graphics	2
ENG	111 College Composition I	3
¹ ____	Humanities/Fine Arts Elective	3
² MTH	166 Precalculus with Trigonometry	5
³ SDV	Elective	1
Total		16–17

2nd Semester

CAD	152 Engineering Drawing Fundamentals II	3
CAD	201 Computer Aided Drafting and Design I	4
MEC	112 Processes of Industry	3
MEC	118 Automated Manufacturing Technology	3
⁴ PED	116 Lifetime Fitness & Wellness	1
⁵ ____	Social Science Elective	3
Total		17

3rd Semester

CAD	202 Computer Aided Drafting and Design II	4
EGR	130 Statics & Strength of Materials	5
MEC	265 Fluid Mechanics	3
⁴ PED/RPK	Elective	1
PHY	201 General College Physics I	4
Total		17

4th Semester

CAD	203 Computer Aided Drafting and Design III	3
⁶ CIV	210 Structural Systems or Technical Elective	4–5
⁷ CST	Elective	3
MEC	210 Machine Design	3
PHY	202 General College Physics II	4
Total		17–18

Total credits for A.A.S. Degree in Engineering Technology with a Specialization in Mechanical Engineering Technology = 67–69

¹ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

² MTH 163–164, 6 cr., may be substituted for MTH 166.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ 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.

⁵ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. Students planning to transfer should consider taking HIS 101–102 or HIS 111–112.

⁶ CIV courses are offered only on the Alexandria Campus. Technical electives may be selected from ARC, CIV, CAD, or ETR prefixes.

⁷ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.



ENGINEERING TECHNOLOGY: COMPUTER AIDED DRAFTING AND DESIGN

Career Studies Certificate **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
Fall Semester		
CAD	201 Computer Aided Drafting and Design I	4
ENG	111 College Composition I or ENG 115 Technical Writing	3
Total		7
Spring Semester		
¹ _____	Approved Technical Elective	3
CAD	202 Computer Aided Drafting and Design II	4
Total		7

Total credits for the Computer Aided Drafting and Design Career Studies Certificate = 14

¹ Student may select technical elective course with department approval.

ENGINEERING TECHNOLOGY: ELECTRONIC MEDIA IN DESIGN RENDERING AND ANIMATION

Career Studies Certificate **AL**

Purpose: This program will allow students to learn various hardware and software applications and will assist them in the visualization, production and presentation of any project in their respective technical fields. Since the certificate is intended for students who have had previous CAD courses or extensive job experience, it is important that students confer with a drafting faculty advisor or division counselor to better acquaint themselves with the selection of classes available.

One Year		Credits
Fall Semester		
CAD	233 Computer Aided Drafting III	3
CAD	238 Computer Aided Modeling and Rendering I	3
ENG	111 College Composition I or ENG 115 Technical Writing	3
Total		9
Spring Semester		
CAD	239 Computer Aided Modeling and Rendering II (Using Studio Max)	3
CAD	295 Topics In: (BIM) Building Information Modeling	3
CAD	298 Seminar and Project or ¹ Approved Technical Elective	3
Total		9

Total credits for the Electronic Media in Design Rendering and Animation 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.

¹ Technical elective courses must be approved by program advisor.

ENGINEERING TECHNOLOGY: LAND PLANNING, SURVEY, AND DEVELOPMENT

Career Studies Certificate **AL**

Purpose: The curriculum is designed to prepare students for either employment in civil engineering or construction industry, or to prepare for continuing education in Civil Engineering Technology, Urban and Landscape Planning or Construction Management. Occupational objectives may include civil engineering surveying, urban planning CAD operation, civil or construction engineering technician.

One Year		Credits
1st Semester		
BLD	165 Construction Field Operations	2
CAD	201 Computer Aided Drafting and Design I	4
CIV	171 Surveying I	3
EGR	115 Engineering Graphics	2
ENG	111 College Composition I	3
Total		14
2nd Semester		
CAD	260 Computer Application for Surveyors & Technicians	3
CIV	172 Surveying II	3
CIV	261 Advanced Surveying	3
¹ _____	Technical Elective	6
Total		15

Total credits for the Land Planning, Survey and Development 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.

¹ Technical elective courses must be approved by the program faculty advisor. Technical electives may be selected from the following: ARC 225, BLD 101, BLD 231, CIV 241, CAD 202, CAD 233, CAD 261.

FINE ARTS

Associate of Arts Degree **AL, AN, LO, MA, WO**

Purpose: The Associate of Arts degree with a major in Fine Arts is designed for students who plan to transfer to a four-year program in a professional school or to a college or university baccalaureate degree program in Fine Arts.

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 transfer institution. The responsibility for proper course selection rests with the student.

Recommended Preparation: Satisfactory aptitude in visual art.

Two Years		Credits
1st Semester		
ART	101 History & Appreciation of Art I	3
ART	121 Drawing I or ART 131 Fundamentals of Design I	4
ENG	111 College Composition I	3
¹ _____	201 Foreign Language	3
² _____	Social Science Elective	3
³ SDV	Elective	1
Total		17



2nd Semester		
ART	102 History & Appreciation of Art II	3
ART	122 Drawing II or ART 132 Fundamentals of Design II	4
⁴ ENG	112 College Composition II	3
¹ ___	202 Foreign Language	3
² ___	Social Science Elective	3
Total		16

3rd Semester		
CST	110 Introduction to Communication	3
MTH	151 Math for the Liberal Arts I	3
⁵ ___	Natural Science/Lab Elective	4
⁶ PED	116 Lifetime Fitness & Wellness	1
² ___	Social Science Elective	3
Total		14

4th Semester		
___	ART or General Elective	3
MTH	152 Math for the Liberal Arts II	3
⁵ ___	Natural Science/Lab Elective	4
⁶ PED/RPK	Elective	1
² ___	Social Science Elective	3
Total		14

Total credits for the A.A. Degree in Fine Arts = 61

¹ Students completing the A.A. in Fine 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. 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 division dean.

² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁵ 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.

⁶ 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.

FINE ARTS

Associate of Applied

Arts Degree

AL, AN, LO, MA, WO

Purpose: The Associate of Applied Arts degree with a major in Fine Arts is designed for students who seek employment in the applied arts field.

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 faculty advisor early in their program.

Recommended Preparation: Satisfactory aptitude in visual art.

Two Years Credits

1st Semester		
ART	101 History & Appreciation of Art I	3
ART	121 Drawing I	4
ART	131 Fundamentals of Design I	4
ENG	111 College Composition I	3
¹ ___	Social Science Elective	3
² SDV	Elective	1
Total		18

2nd Semester		
ART	102 History & Appreciation of Art II	3
ART	122 Drawing II	4
ART	132 Fundamentals of Design II	4
ENG	112 College Composition II	3
³ PED	116 Lifetime Fitness & Wellness	1
¹ ___	Social Science Elective	3
Total		18

3rd Semester		
ART	221 Drawing III or ART 253 Design III or PHT 101 Photography I	3–4
⁴ ___	Art Studio or General Elective	6
⁵ ___	Humanities/Fine Arts Elective	3
MTH	151 Math for the Liberal Arts I	3
Total		15–16

4th Semester		
ART	222 Drawing IV or ART 254 Design IV or PHT 102 Photography II	3–4
⁴ ___	Art Studio or General Elective	4
CST	110 Intro to Communication	3
⁵ ___	Humanities/Fine Arts Elective	3
³ PED/RPK	Elective	1
Total		14–15

Total credits for the A.A.A. Degree in Fine Arts = 65–67

¹ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

³ 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.

⁴ Recommended studio electives: painting, sculpture, printmaking, ceramics, computer graphics, advanced drawing and/or fine arts photography.

⁵ The humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

FINE ARTS: PHOTOGRAPHY SPECIALIZATIONAssociate of Applied Arts Degree **AL, WO**

Purpose: The Photography specialization is designed for students who seek employment in the applied arts field. Course work 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.

Two Years		Credits
1st Semester		
ART	101 History & Appreciation of Art I	3
ART	121 Drawing I	4
ART	131 Fundamentals. of Design I	4
ENG	111 College Composition I	3
PHT	100 Introduction to Photography or PHT 101 Photography I	3
¹ SDV	Elective	1
Total		18
2nd Semester		
ART	102 History & Appreciation of Art II	3
ART	122 Drawing II	4
ART	132 Fundamentals of Design II	4
ENG	112 College Composition II	3
² PED	116 Lifetime Fitness & Wellness	1
PHT	102 Photography II or PHT 135 Electronic Darkroom or PHT 270 Digital Imaging	3
Total		18

3rd Semester		
³ ___	Humanities/Fine Arts Elective	3
___	PHT or General Elective	4
PHT	110 History of Photography	3
PHT	Elective	3
⁴ ___	Social Science Elective	3
Total		16

4th Semester		
CST	110 Introduction to Communication	3
³ ___	Humanities/Fine Arts Elective	3
MTH	151 Math for the Liberal Arts I	3
² PED/RPK	Elective	1
⁴ ___	Social Science Elective	3
Total		13

Total credits for the A.A.A. Degree in Fine Arts with a Specialization in Photography = 65

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² 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.

³ The humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

⁴ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.



FIRE SCIENCE TECHNOLOGY

Associate of Applied Science Degree **AN**

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.

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 faculty advisor early in their program.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
FST	100 Principles of Emergency Services	3
FST	110 Fire Behavior and Combustion	3
¹ MTH	151 Mathematics for the Liberal Arts I	3
² PED	116 Lifetime Fitness & Wellness	1
³ ___	Social Science Elective	3
SDV	101 Orientation to Fire Science	1
Total		17
2nd Semester		
⁴ ENG	112 College Composition II	3
FST	112 Hazardous Materials Chemistry	3
FST	115 Fire Prevention	3
FST	120 Occupational Safety & Health for the Fire Science	3
ITE	115 Introduction to Computer Applications & Concepts	3
³ ___	Social Science Elective	3
Total		18
3rd Semester		
CST	110 Introduction to Communication	3
FST	210 Legal Aspects of Fire Service	3
FST	240 Fire Administration	3
⁵ ___	Humanities/Fine Arts Elective	3
⁶ ___	Natural Science/Lab Elective	4
Total		16
4th Semester		
FST	205 Fire Protection Hydraulics & 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
² PED/RPK	Elective	1
Total		16

Total credits for the A.A.S. Degree in Fire Science Technology = 67

¹ Students may substitute a higher-level math. Consult a faculty advisor to make the appropriate selection.

² 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.

³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. Fire Science students are encouraged to choose from psychology or sociology.

⁴ ENG 115 or ENG 116 may be substituted for ENG 112.

⁵ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

⁶ The Natural Science elective may be selected from BIO 101 or BIO 141 or CHM 101 or CHM 111 or CHM 121 or NAS 101 or NAS 161 or PHY 101 or PHY 102 or PHY 201.

FITNESS

Career Studies Certificate **AL, AN, LO, MA, WO**

Purpose: This curriculum is designed to train students to become knowledgeable fitness instructors in health clubs, recreation departments, and fitness facilities in business and industry.

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 Fitness Certificate advisor.

Completion Requirements: The following must be met to obtain the Fitness Career Studies Certificate:

1. Attain a good to excellent score on three out of five fitness assessments.
2. Achieve a grade of "C" or better in all certificate courses.
3. Score 80% or higher on the exit exam.
4. Hold a current CPR certification.

One Year **Credits**

1st Semester		Credits
HLT	105 Cardiopulmonary Resuscitation or a current CPR card	1
PED	103 Aerobic Fitness I or PED 105 Aerobic Dance I	1
PED	111 Weight Training I	1
PED	116 Lifetime Fitness & Wellness	1-2
Total		4-5

2nd Semester		Credits
CST	110 Introduction to Communication or CST 126 Interpersonal Communication	3
PED	107 Exercise and Nutrition	1
¹ PED	220 Adult Health and Development	2-3
Total		6-7

Total credits for the Fitness Career Studies Certificate = 10-12

Other suggested courses (not required): DIT 121 Nutrition I; PED 195 Topics in Kinesiology/Biomechanics; PED 195 Topics in Exercise Physiology; PED 195 Topics in Personal Trainer Preparation; or PED 195 Topics in Group Exercise.

¹ PED 190 – Coordinated Internship, 2 cr., may be substituted for PED 220 with approval of a Fitness advisor.

GENERAL STUDIESAssociate of Science Degree **AL, AN, LO, MA, WO, ELI**

Purpose: The General Studies A.S. degree is a flexible associate degree. For students who plan to transfer, the degree can parallel the first two years of a four-year B.S. degree 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 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
1st Semester		
ENG	111 College Composition I	3
ITE	115 Introduction to Computer Applications & Concepts or CSC 110 Introduction to Computing	3
MTH	151 Mathematics for the Liberal Arts I	3
¹ ___	Natural Science/Lab Elective	4
² PED	116 Lifetime Fitness & Wellness	1
³ SDV	Elective	1
Total		15
2nd Semester		
⁴ CST	Elective	3
⁵ ENG	112 College Composition II	3
⁶ HIS	Elective	3
⁷ ___	Humanities/Fine Arts Elective	3
¹ ___	Natural Science/Lab Elective	4
Total		16
3rd Semester		
⁸ ___	General Electives	9
⁷ ___	Humanities/Fine Arts Elective	3
⁹ ___	Social Science Elective	3
Total		15
4th Semester		
⁸ ___	General Electives	10
² PED/RPK	Elective	1
⁹ ___	Social Science Elective	3
Total		14

Total credits for the A.S. Degree in General Studies = 60

¹ The science elective may be selected from biology, chemistry, 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.

² 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.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.

⁵ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁶ The history elective may be selected from the courses listed under Social/Behavioral Sciences listed under General Education Electives.

⁷ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

⁸ If transfer to another college is planned, the elective courses should be selected based on the requirements of the institution to which transfer is intended.

⁹ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

GENERAL STUDIES: RECREATION, PARKS, AND LEISURE STUDIES SPECIALIZATION

Associate of Science Degree

AN

Purpose: This program is designed to prepare students to transfer into baccalaureate Leisure Studies and Recreation and Parks programs 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 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
1st Semester		
ENG	111 College Composition I	3
¹ ___	Humanities/Fine Arts Elective	3
PED	116 Lifetime Fitness & Wellness	1
RPK	100 Introduction Recreation, Parks & Leisure Studies	3
² ___	Social Science Elective	3
³ SDV	Elective	1
Total		14
2nd Semester		
⁴ CST	Elective	3
⁵ ENG	112 College Composition II	3
ITE	115 Introduction to Computer Applications & Concepts	3
RPK	201 Recreation & Parks Management	3
⁶ ___	Natural Science/Lab Elective	4
Total		16
3rd Semester		
RPK	141 Leadership & Supervision or RPK 120 Outdoor Recreation	3
RPK	265 Risk Management	3
¹ ___	Humanities/Fine Arts Elective	3
⁶ ___	Natural Science/Lab Elective	4
² ___	Social Science Elective	3
Total		16
4th Semester		
MTH	151 Math for the Liberal Arts I or MTH 241 Statistics I	3
RPK	135 Program Planning or RPK 125 Outdoor Education & Interpretation	3
⁷ ___	Electives	10
Total		16

Total credits for the A.S. Degree in General Studies with a Specialization in Recreation, Parks & Leisure Studies = 62

¹ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. One of the selections should be a history course.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.

⁵ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁶ The science elective may be selected from biology, chemistry, physics, geology, or natural science courses with a lab component listed under physical and life sciences/mathematics courses listed under General Education Electives.

⁷ Any RPK courses listed in this catalog are considered approved Recreation electives. At least one credit must be in an RPK activities course.

GENERAL STUDIES: OUTDOOR RECREATION AND RESOURCE MANAGEMENT

Career Studies Certificate **AN**

Purpose: This program prepares students to incorporate stewardship practices and manage outdoor recreation resources at the municipal, state, and federal levels.

One Year		Credits
1st Semester		
ENG	111 College Composition I	3
RPK	100 Introduction Recreation, Parks & Leisure Studies	3
RPK	265 Risk Management	3
¹ RPK	Electives	6
Total		15
2nd Semester		
RPK	125 Outdoor Education & Interpretive Services	3
RPK	120 Outdoor Recreation	3
RPK	140 Land Use Ethics	1
RPK	220 Ecotourism & Sustainable Practices	4
¹ RPK	Electives	3
Total		14

Total credits for the Career Studies Certificate in Outdoor Recreation and Resource Management = 29

All first time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

¹ Any RPK courses listed in this catalog are considered approved Recreation electives.

GENERAL STUDIES: RECREATION PROGRAMMING AND ADMINISTRATION

Career Studies Certificate **AN**

Purpose: This program is designed to prepare students who work in the recreation, parks and leisure studies industry to develop leadership, program planning, and management knowledge and skills.

One Year		Credits
1st Semester		
ENG	111 College Composition I	3
RPK	100 Introduction Recreation & Parks	3
RPK	135 Program Planning	3
RPK	141 Leadership & Supervision	3
RPK	265 Risk Management	3
Total		15
2nd Semester		
RPK	146 Recreation Facilities Management & Design	3
RPK	201 Recreation & Parks Management	3
RPK	255 Leisure Services for Persons with Disabilities	3
¹ RPK	Electives	5
Total		14

Total credits for the Career Studies Certificate in Recreation Programming & Administration = 29

All first time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

¹ Any RPK courses listed in this catalog are considered approved Recreation electives.

GEOGRAPHIC INFORMATION SYSTEMS (GIS)Career Studies Certificate **LO**

Purpose: This program is designed to help students develop both the theoretical knowledge and a practical facility with GIS. Students who already hold baccalaureate or master's degrees 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
1st Semester		
¹ ENG/CST	Elective	3
GEO	220 World Regional Geography	3
GIS	200 Geographic Information Systems I	4
Total		10
2nd Semester		
GIS	201 Geographic Information Systems II	4
GIS	295 Topics in GIS – Introduction to Remote Sensing	4
² _____	Elective	3
Total		11
3rd Semester		
GIS	205 Geographic Information Systems 3-Dimensional Analysis	4
GIS	290 Internship	1
³ _____	Technical Elective	3
Total		8

Total credits for the Career Studies Certificate in Geographic Information Systems (GIS) = 29

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

To be credited toward the certificate, a minimum grade of “C” for each class is required.

¹ The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.

² Elective must be chosen from the following disciplines: BIO, CHM, EGR, ENV, GEO, GOL, HIS, IT, MKT, MTH, and PHY.

³ Technical elective must be chosen from the following: ENV/GIS 230, GIS Applications in Environmental Science; GEO 200, Intro to Physical Geography; GEO 210, Intro to Cultural Geography; GIS 293, Studies in Cartography for GIS; ITD 110, Web Page Design (or higher level ITD); ITN 101, Intro to Network Concepts (or higher ITN); ITP 112, Visual Basic.net (or higher ITP); MTH 163, Precalculus I (or higher); or MTH 241, Statistics I.

HEALTH INFORMATION MANAGEMENT A.A.S.

See Medical Education

HISTORIC PRESERVATIONCareer Studies Certificate **LO**

Purpose: This curriculum is designed for persons seeking to develop research, analytical, and field skills in historic preservation, archaeology, and museum studies sufficient for the student to continue or to participate in local community-based projects.

One Year		Credits
1st Semester		
ENG	111 College Composition I	3
HIS	180 Historical Archaeology	3
HIS	181 History and Theory of Historic Preservation	3
Total		9
2nd Semester		
HIS	183 Survey of Museum Practice	3
HIS	188 Field Survey Techniques for Archaeology	3
Total		6
3rd Semester		
HIS	186 Collections Management	3
HIS	187 Interpreting Material Culture	3
HIS	199 Supervised Study/Independent Project	3
Total		9

Total credits for the Historic Preservation 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.

HORTICULTURE TECHNOLOGYAssociate of Applied Science Degree **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 internship in their area of emphasis.

Related Specialization:

Landscape Design Specialization

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
HRT	100 Introduction to Horticulture	3
HRT	125 Chemicals in Horticulture	3
HRT	127 Horticultural Botany	3
HRT	160 Applied Mathematics for the Green Industry	2
¹ PED	116 Lifetime Fitness & Wellness	1
² SDV	Elective	1
Total		16



2nd Semester		
³ CST	Elective	3
HRT	115 Plant Propagation	3
HRT	120 History of Garden Design	3
HRT	246 Herbaceous Plants	3
⁴ _____	Humanities/Fine Arts Elective	3
ITE	115 Introduction to Computer Applications & Concepts	3
Total		18
3rd Semester		
BUS	165 Small Business Management or BUS 200 Principles of Management	3
HRT	207 Plant Pest Management	3
HRT	231 Planting Design I	3
HRT	245 Woody Plants	3
HRT	269 Professional Turf Care	3
⁵ _____	Social Science Elective	3
Total		18
4th Semester		
HRT	205 Soils	3
HRT	247 Indoor Plants	2
HRT	275 Landscape Const./Maintenance	3
HRT	290 Coordinated Internship or HRT 297 Cooperative Education	1
HRT	Elective	3
¹ PED/RPK	Elective	1
⁶ _____	MTH or Laboratory Science Elective	3-4
Total		16-17

Total credits for the A.A.S. Degree in Horticulture Technology = 68-69

- ¹ 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.
- ² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ³ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.
- ⁴ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. A 200-level course in Spanish is strongly recommended.
- ⁵ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ⁶ MTH 151, MTH 152, GOL 105, GOL 225, ENV 121, NAS 125 or other course approved by the faculty advisor.

**HORTICULTURE TECHNOLOGY:
LANDSCAPE DESIGN SPECIALIZATION**

Associate of Applied Science Degree **LO**

Purpose: This specialization is designed to prepare the students for full-time employment within the field of landscape design as well as assisting those who are presently working and who desire to further their knowledge and upgrade their skills.

Graduates of this degree option are prepared to work in the field of landscape design, in nurseries and garden centers and as institutional horticultural staff.

Students in this degree option have the opportunity to gain career-related work experience through Coordinated Internship, Cooperative Education, or Special Studio Project in the area of design.

Two Years		Credits
1st Semester		
¹ CST	Elective	3
ENG	111 College Composition	3
HRT	100 Introduction to Horticulture	3
ITE	115 Introduction to Computer Applications & Concepts	3
HRT	160 Applied Mathematics for the Green Industry	2
² PED	116 Lifetime Fitness and Wellness	1
³ SDV	Elective	1
Total		16
2nd Semester		
⁴ _____	Humanities/Fine Arts Elective	3
⁵ HRT	Elective	3
HRT	120 History of Garden Design	3
HRT	230 Site Analysis	2
HRT	246 Herbaceous Plants	3
² PED/RPK	Elective	1
⁶ _____	Social Science Elective	3
Total		18
3rd Semester		
BUS	165 Small Business Management or BUS 200 Principles of Management	3
HRT	231 Planting Design I	3
HRT	245 Woody Plants	3
HRT	251 Site Engineering for Landscape Design	3
⁴ HRT	Elective	3
⁵ _____	MTH or Laboratory Science Elective	3-4
Total		18-19
4th Semester		
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	2
Total		16

Total credits for the A.A.S. Degree in Horticulture Technology with a Specialization in Landscape Design = 68-69

- ¹ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227 or 229.
- ² 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.
- ³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ⁴ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. A 200-level course in Spanish is strongly recommended.
- ⁵ The horticulture elective may be met by one of the following options: HRT 115, 125, 127, 205 (prerequisite is HRT 125), 207, 269.
- ⁶ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ⁷ MTH 151, MTH 152, GOL 105, GOL 225, ENV 121, NAS 125 or other course approved by the faculty advisor.

The following HRT courses have prerequisites (listed in parentheses):

- HRT 205 (HRT 125)
- HRT 232 (HRT 231)
- HRT 251 (HRT 231 is a pre- or co-requisite; HRT 230 is strongly recommended)
- HRT 252 (HRT 231 & HRT 251; HRT 232 is a pre- or co-requisite)
- HRT 250 (HRT 245 OR HRT 201)

HOSPITALITY MANAGEMENTAssociate of Applied Science Degree **AN**

Purpose: The curriculum is designed 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 faculty advisor early in their program.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
HRI	101 Hotel Restaurant Organization & Management I	3
^{1,2} HRI	120 Principles of Food Preparation	4
HRI	158 Sanitation and Safety	3
³ MTH	151 Mathematics for the Liberal Arts I	3
⁴ SDV	Elective	1
Total		17
2nd Semester		
ACC	211 Principles of Accounting I	3
CST	110 Introduction to Communication	3
HRI	102 Hotel Restaurant Organization & Management II	3
HRI	138 Commercial Food Production Management.	3
⁵ HRI	Elective	4
⁶ PED	116 Lifetime Fitness & Wellness	1
Total		17
3rd Semester		
HRI	245 Labor Cost Control	3
HRI	251 Food & Beverage Cost Control I	3
HRI	255 Human Resources Management & Training for Hospitality & Tourism	3
⁷ ___	Humanities/Fine Arts Elective	3
⁶ PED/RPK	Elective	1
⁸ ___	Social Science Elective	3
Total		16
4th Semester		
¹ HRI	256 Principles & Applications of Catering	3
HRI	275 Hospitality Law	3
⁵ HRI	Electives	6
⁸ ___	Social Science Elective	3
Total		15

Total credits for the A.A.S. Degree in Hospitality Management = 65

¹ Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student. HRI 106 and HRI 107 may be substituted for this course.

² HRI 106 and HRI 107 may be substituted for this course.

³ If you are planning to transfer to another college or university, select a math course that is equivalent to the other school's requirement.

⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁵ Preapproved electives can be selected from any course offered with the HRI, TRV, and DIT prefix. See your faculty advisor for alternative procedures.

⁶ 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.

⁷ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

⁸ The social science elective may be selected from the social/ behavioral sciences courses listed under General Education Electives. If you are planning to transfer to another college or university select social science courses that will meet the other institution's requirement.

HOSPITALITY MANAGEMENT: FOOD SERVICE MANAGEMENT SPECIALIZATIONAssociate of Applied Science Degree **AN**

Purpose: The curriculum is designed to enable the student to enter executive training and management positions in restaurants and food service operations in institutions, hotels, resorts, or private clubs. The curriculum specializes in the food service management phase of the hospitality industry.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
HRI	101 Hotel-Restaurant Organization and Management I	3
^{1,2} HRI	120 Principles of Food Preparation	4
HRI	158 Sanitation and Safety	3
³ MTH	151 Mathematics for the Liberal Arts I	3
⁴ SDV	Elective	1
Total		17
2nd Semester		
ACC	211 Principles of Accounting I	3
CST	110 Introduction to Communication	3
DIT	125 Current Concepts in Diet & Nutrition or DIT 121 Nutrition I	3
HRI	102 Hotel Restaurant Organization & Management II	3
^{1,5} HRI	126 The Art of Garnishing	1
HRI	138 Commercial Food Production Management	3
⁶ PED	116 Lifetime Fitness & Wellness	1
Total		17
3rd Semester		
HRI	225 Menu Plan./Dining Room Service	3
HRI	245 Labor Cost Control	3
HRI	251 Food & Beverage Cost Control I	3
HRI	255 Human Resources Management & Training for Hospitality & Tourism	3
⁶ PED/RPK	Elective	1
⁷ ___	Social Science Elective	3
Total		16
4th Semester		
HRI	215 Food Purchasing	3
¹ HRI	256 Principles & Applications of Catering	3
HRI	275 Hospitality Law	3
⁸ ___	Humanities/Fine Arts Elective	3
⁷ ___	Social Science Elective	3
Total		15

Total credits for the A.A.S. Degree for Hospitality Management with a Specialization in Food Service Management = 65

¹ Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student. HRI 106 and HRI 107 may be substituted for this course.

² HRI 106 and HRI 107 may be substituted for this course.

³ If you are planning to transfer to another college or university, select a math course that is equivalent to the other school's requirement.

⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁵ HRI may be substituted for this course.



⁶ 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.

⁷ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. If you are planning to transfer to another college or university select social science courses that will meet the other institution's requirement.

⁸ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

**HOSPITALITY MANAGEMENT:
HOTEL MANAGEMENT SPECIALIZATION**

Associate of Applied Science Degree **AN**

Purpose: The curriculum is designed to enable the student to enter executive training and management positions in hotels, motor inns, and clubs. The curriculum specializes in the hotel management phase of the hospitality industry.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
HRI	101 Hotel Restaurant Organization & Management I	3
^{1,2} HRI	120 Principles of Food Preparation	4
HRI	158 Sanitation and Safety	3
³ MTH	151 Mathematics for the Liberal Arts I	3
⁴ SDV	Elective	1
Total		17
2nd Semester		
ACC	211 Principles of Accounting I	3
CST	110 Introduction to Communication	3
HRI	102 Hotel Restaurant Organization & Management II	3
HRI	138 Commercial Food Production Management	3
HRI	165 Hotel Housekeeping/Engineering Management	4
⁵ PED	116 Lifetime Fitness & Wellness	1
Total		17

3rd Semester		
HRI	245 Labor Cost Control	3
HRI	251 Food & Beverage Cost Control I	3
HRI	255 Human Resources Management & Training for Hospitality & Tourism	3
HRI	265 Hotel Front Office Operations	3
⁵ PED/RPK	Elective	1
⁶ _____	Social Science Elective	3
Total		16

4th Semester		
HRI	235 Marketing of Hospitality Services	3
¹ HRI	256 Principles & Applications of Catering	3
HRI	275 Hospitality Law	3
⁷ _____	Humanities/Fine Arts Elective	3
⁶ _____	Social Science Elective	3
Total		15

Total credits for the A.A.S. Degree in Hospitality Management with a Specialization in Hotel Management = 65

¹ Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student. HRI 106 and HRI 107 may be substituted for this course.

² HRI 106 and HRI 107 may be substituted for this course.

³ If you are planning to transfer to another college or university, select a math course that is equivalent to the other school's requirement.

⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁵ 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.

⁶ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. If you are planning to transfer to another college or university select social science courses that will meet the other institution's requirement.

⁷ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.



HOSPITALITY MANAGEMENT: NUTRITION MANAGEMENT SPECIALIZATION

Associate of Applied Science Degree **AN**

Purpose: The curriculum is designed to prepare students for entry-level management positions in nutrition-related food service settings. Opportunities include delivery of nutrition services to schools, nursing homes, assisted living and retirement communities, hospitals, restaurants, wellness facilities and community nutrition programs. The curriculum specializes in the nutritional aspects of food and food service in the hospitality industry.

Two Years		Credits
1st Semester		
DIT	121 Nutrition I	3
ENG	111 College Composition I	3
^{1,2} HRI	120 Principles of Food Preparation	4
HRI	158 Sanitation and Safety	3
³ MTH	151 Mathematics for the Liberal Arts I	3
⁴ SDV	Elective	1
Total		17
2nd Semester		
ACC	211 Principles of Accounting I	3
CST	110 Introduction to Communication	3
DIT	122 Nutrition II	3
HRI	138 Commercial Food Production Management	3
ITE	115 Intro to Computer Applications & Concepts	3
⁵ PED	116 Lifetime Fitness & Wellness	1
Total		16
3rd Semester		
HRI	225 Menu Planning and Dining Room Service	3
HRI	251 Food & Beverage Cost Control I	3
HRI	255 Human Resources Management & Training for Hospitality & Tourism	3
⁶ ___	Humanities/Fine Arts Elective	3
⁵ PED/RPK	Elective	1
⁷ ___	Social Science Elective	3
Total		16
4th Semester		
DIT	221 Therapeutic Nutrition	4
HRI	215 Food Purchasing	3
¹ HRI	256 Principles & Applications of Catering	3
⁸ HRI	Elective	3
⁷ ___	Social Science Elective	3
Total		16

Total credits for the A.A.S. Degree in Hospitality Management with a Specialization in Nutrition Management = 65

¹ Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student. HRI 106 and HRI 107 may be substituted for this course.

² HRI 106 and HRI 107 may be substituted for this course.

³ MTH 151 or higher.

⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁵ 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.

⁶ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

⁷ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. If you are planning to transfer to another college or university, select social science courses that will meet the other institution's requirement.

⁸ Preapproved electives can be selected from any course offered with the HRI and DIT prefix. See your faculty advisor for alternative procedures.

HOSPITALITY MANAGEMENT: CULINARY ARTS

Certificate **AN**

Purpose: The Culinary Arts Certificate curriculum is designed for persons seeking skills for employment in culinary positions and for those presently employed who desire updating skills for the food service industry.

Apprenticeship Program: The Nation's Capital Chef's Association (NCCA), in cooperation with the Hospitality Management Program at Northern Virginia Community College (NOVA), offer 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).

The apprenticeship program may be completed in one and one-half to three years depending on previous course work and food service work experience. The program requires six thousand hours of on-the-job training as an apprentice to a qualified chef in a full service restaurant, club, or hotel. While working, the apprentice attends college classes at Northern Virginia Community College's Annandale campus one day per week. Upon completion of the program, the apprentice will be qualified to sit for the Certified Cook exam through the American Culinary Federation Educational Institute (ACFEI) and may be classified as a Journeyman Cook through the U.S. Department of Labor. After three years of class work, the apprentice will be two classes away from the Culinary Arts Certificate from Northern Virginia Community College.

One Year		Credits
1st Semester		
ENG	111 College Composition I	3
HRI	101 Hotel Rest. Organization & Management I	3
¹ HRI	106 Principles of Culinary Arts I	3
HRI	145 Garde Manger	3
HRI	225 Menu Planning & Dining Room Services or HRI 251 Food & Beverage Cost Control I	3
² SDV	Elective	1
Total		16
2nd Semester		
HRI	128 Principles of Baking	3
HRI	158 Sanitation & Safety	3
HRI	107 Principles of Culinary Arts II	3
HRI	215 Food Purchasing or DIT 121 Nutrition I or DIT 125 Current Concepts in Diet & Nutrition	3
³ ___	Social Science Elective	3
Total		15

Total credits for the Culinary Arts Certificate = 31

¹ Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. If you are planning to transfer to another college or university, select social science courses that will meet the other institution's requirement.



**HOSPITALITY MANAGEMENT:
FOOD SERVICE MANAGEMENT**

Certificate **AN**

Purpose: The curriculum is designed for persons seeking employment in the food service industry and for those presently employed who desire updating their skills in the food service industry.

One Year Credits

1st Semester		
ENG	111 College Composition I	3
HRI	101 Hotel Restaurant Organization & Management I	3
¹ HRI	120 Principles of Food Preparation	4
HRI	158 Sanitation and Safety	3
² SDV	Elective	1
Total		14

2nd Semester		
DIT	125 Current Concepts of Diet & Nutrition or DIT 121 Nutrition I	3
HRI	102 Hotel Restaurant Organization & Management II	3
HRI	126 The Art of Garnishing or HRI 145 Garde Manger	1
HRI	138 Commercial Food Production Management	3
HRI	255 Human Resources Management & Training for Hospitality & Tourism	3
³ ___	Social Science Elective	3
Total		16

Total credits for the Food Service Management Certificate = 30

¹ Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student. HRI 106 and HRI 107 may be substituted for this course.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. If you are planning to transfer to another college or university select social science courses that will meet the other institution's requirement.

**HOSPITALITY MANAGEMENT:
HOTEL MANAGEMENT**

Certificate **AN**

Purpose: The curriculum is designed for persons seeking employment in the hospitality industry and for those presently employed who desire updating their skills in the lodging industry.

One Year Credits

1st Semester		
HRI	101 Hotel Restaurant Organization & Management I	3
¹ HRI	120 Principles of Food Preparation	4
HRI	255 Human Resources Management & Training for Hospitality & Tourism	3
HRI	265 Hotel Front Office Operations	3
² SDV	Elective	1
Total		14

2nd Semester		
ENG	111 College Composition I	3
HRI	102 Hotel Restaurant Organization & Management II	3
HRI	165 Hotel Housekeeping/Engineering Management	4
HRI	235 Marketing of Hospitality Services	3
³ ___	Social Science Elective	3
Total		16

Total credits for the Hotel Management Certificate = 30

¹ Special requirement for food laboratories: A white uniform or classic chef is the financial responsibility of the student. HRI 106 and HRI 107 may be substituted for this course.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. If you are planning to transfer to another college or university select social science courses that will meet the other institution's requirement.

**HOSPITALITY MANAGEMENT: MEETING,
EVENT, AND EXHIBITION MANAGEMENT**

Certificate **AN**

Purpose: The curriculum is designed for persons 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 2500 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

1st Semester		
ENG	111 College Composition I	3
HRI	103 Introduction to Meeting Planning	3
HRI	232 Meeting and Exhibition Law/Ethics	3
¹ ___	Social Science Elective	3
² SDV	Elective	1
TRV	111 Geography of Tourism I	3
Total		16

2nd Semester		
HRI	104 Introduction to Association Management.	3
HRI	190 Internship in Meeting Planning or HRI Elective	2
HRI	229 Principles of Meeting Planning	3
HRI	230 Exhibition Management	3
HRI	233 Meeting and Exhibition Marketing	3
Total		14

Total credits for the Meeting, Event and Exhibition Management Certificate = 30

¹ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

INFORMATION TECHNOLOGY-RELATED PROGRAMS

See Computer Science, Associate of Science Degree

INFORMATION TECHNOLOGYAssociate of
Science Degree **AL, AN, LO, MA, WO, ELI**

Purpose: The Associate of Science degree curriculum in Information Technology 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 faculty 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
1st Semester		
ENG	111 College Composition I	3
¹ HIS	Elective	3
ITE	115 Introduction to Computer Applications & Concepts	3
ITN	100 Introduction to Telecommunications	3
MTH	163 Precalculus I or higher-level math course	3
² SDV	Elective	1
Total		16
2nd Semester		
³ ENG	112 College Composition II	3
ITE	170 Multimedia Software	3
ITP	100 Software Design	3
⁴ MTH	271 Applied Calculus I	3
⁵ PED	116 Lifetime Fitness & Wellness	1
⁶ ___	Social Science Elective	3
Total		16
3rd Semester		
CST	110 Introduction to Communication	3
⁷ ITP	120 JAVA Programming I or ITP 132 C++ Programming I	4
⁸ ___	Humanities/Fine Arts Elective	3
⁵ PED/RPK	Elective	1
⁹ ___	Natural Science/Lab Elective	4
Total		15
4th Semester		
⁸ ___	Humanities/Fine Arts Elective	3
ITD	256 Advanced Database Management	3
ITE	221 PC Hardware and OS Architecture	3
⁹ ___	Natural Science/Lab Elective	4
⁶ ___	Social Science Elective	3
Total		16

Total credits for the A.S. Degree in Information Technology = 63

IT courses used for this program may not be more than 10 years old, unless approved by division dean.

¹ Select from HIS 101, 102, 121, or 122. Other HIS courses may be taken after consultation with a faculty advisor.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

³ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁴ Students starting with a high placement test score may wish to take MTH 173 rather than MTH 271.

⁵ 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.

⁶ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. Students planning to transfer to GMU should take HIS 101, 102, 111, 112, 121, or 122, and either PSY or SOC.

⁷ Students planning to transfer to GMU should take ITP 120.

⁸ Humanities/fine arts elective MUST be selected from the humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

⁹ The science elective may be selected from biology, chemistry, physics, geology, or the natural science 100 series courses with a lab component, excluding NAS 161–162, listed under General Education Electives. Some four-year colleges, including GMU, require a two-semester sequence.

INFORMATION SYSTEMS TECHNOLOGYAssociate of Applied
Science Degree **AL, AN, LO, MA, WO**

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 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 technology.

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 faculty 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
1st Semester		
ENG	111 College Composition I	3
ITE	115 Introduction to Computer Applications & Concepts	3
ITP	100 Software Design	3
MTH	151 Math for the Liberal Arts I or higher-level math course	3
PED	116 Lifetime Fitness & Wellness	1
¹ ___	Social Science Elective	3
SDV	101 Orientation to Information Technology	1
Total		17
2nd Semester		
² ___	Humanities/Fine Arts Elective	3
ITE	170 Multimedia Software	3
ITN	100 Introduction to Telecommunications	3
³ ITP	Programming Elective	4
⁴ PED/RPK	Elective	1
¹ ___	Social Science Elective	3
Total		17

3rd Semester		
⁵ CST	Elective	3
ITD	110 Web Design I	3
ITE	221 PC Hardware and OS Architecture	3
ITN	171 Unix I	3
⁶ _____	IT Electives	6
Total		18

4th Semester		
⁶ _____	IT Electives	9
ITD	256 Advanced Database Management	3
ITN	260 Network Security Basics	3
Total		15

Total credits for the A.A.S. Degree in Information Systems Technology = 67

IT courses used for this program may not be more than 10 years old, unless approved by division dean.

¹ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

² Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

³ IT Programming elective must be chosen from the following: ITP 112, ITP 120, ITP 130, ITP 132, ITP 136, or ITP 225.

⁴ 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.

⁵ The CST elective must be selected from the following: CST 100, 110, 115, 126, 227, and 229.

⁶ 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 **LO, ELI**

Purpose: This career studies certificate 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

1st Semester		
ITP	100 Software Design	3
Total		3

2nd Semester		
¹ ITP	120 JAVA Programming I or ITP 112 Visual BASIC.NET I	4
Total		4

3rd Semester		
² ITP	220 JAVA Programming II o ITP 212 Visual BASIC.NET II	4
Total		4

Total credits for the Career Studies Certificate in Application Programming = 11

IT courses used for this program may not be more than 10 years old, unless approved by division dean.

¹ To prepare for the MCP-Programming certification ITP 112 must be completed. To prepare for Sun Certified Programming for JAVA 2 certification ITP 120 must be completed.

² To prepare for the MCP-Programming certification ITP 212 must be completed. To prepare for Sun Certified Programming for JAVA 2 certification ITP 220 must be completed.

INFORMATION SYSTEMS TECHNOLOGY: DATABASE SPECIALIST

Career Studies Certificate **MA**

Purpose: This career studies certificate 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.

One Year Credits

1st Semester		
ITD	132 Structured Query Language	3
ITE	115 Introduction to Computer Applications and Concepts	3
ITP	100 Software Design	3
Total		9

2nd Semester		
ITD	134 PL/SQL Programming	3
ITD	260 Data Modeling and Design	3
Total		6

Total credits for the Career Studies Certificate in Database Specialist = 15

IT courses used for this program may not be more than 10 years old, unless approved by division dean.

**INFORMATION SYSTEMS TECHNOLOGY:
IT TECHNICAL SUPPORT**Career Studies Certificate **AN, WO**

Purpose: This career studies certificate is designed for persons seeking employment in a technical support center and for those persons employed who desire 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+ Certification with Help Desk Specialization.

One Year		Credits
1st Semester		
ITE	115 Introduction to Computer Applications and Concepts	3
ITN	106 Microcomputer Operating Systems	3
ITN	107 Personal Computer Hardware and Troubleshooting	3
Total		9
2nd Semester		
ITE	180 Help Desk Support Skills	3
ITE	182 User Support/Help Desk Principles	3
Total		6

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 division dean.

**INFORMATION SYSTEMS TECHNOLOGY:
NETWORK ADMINISTRATION**Career Studies Certificate **AN, LO, ELI**

Purpose: This career studies certificate provides the student with a broad background in networking technologies, administration, and support. The material presented in the certificate provides the foundation knowledge covered in the Network+ Certification. It is recommended that students complete the A+ Certification before the Network+ Certification.

One Year		Credits
1st Semester		
ITE	115 Introduction to Computer Applications and Concepts	3
ITN	100 Introduction to Telecommunications	3
ITN	260 Network Security Basics	3
Total		9
2nd Semester		
ITN	101 Introduction to Network Concepts	3
ITN	200 Administration of Network Resources	3
ITN	208 Protocols and Communications	4
ITN	245 Network Troubleshooting	3
Total		13

Total credits for the Career Studies Certificate in Network Administration = 22

IT courses used for this program may not be more than 10 years old, unless approved by division 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 **AL, AN, MA, WO**

Purpose: This career studies certificate 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 a network; optimize Wide Area Networks (WANs) through Internet access solutions that reduce bandwidth and lower WAN costs; and provide remote access by integrating remote dial-up access with remote Local Area Network (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.

One Year		Credits
1st Semester		
ITN	154 Networking Fundamentals – CISCO	4
ITN	155 Introductory Routing – CISCO	4
Total		8
2nd Semester		
ITN	156 Basic Switching and Routing – CISCO	4
ITN	157 WAN Technologies – CISCO	4
Total		8

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 division 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 SECURITY**Career Studies Certificate **AL, MA, WO**

Purpose: This career studies certificate in Network Security 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 career studies certificate also helps prepare students for the Security+ and the CISSP certification exams.

One Year		Credits
1st Semester		
¹ ENG	Elective	3
ITN	260 Network Security Basics	3
ITN	261 Network Attacks, Computer Crime and Hacking	4
ITN	262 Network Communication, Security and Authentication	4
Total		14

2nd Semester		
ITN	263 Internet/Intranet Firewalls and eCommerce Security	4
ITN	266 Network Security Layers	3
ITN	267 Cyberlaw	3
Total		10

Total credits for the Career Studies Certificate in Network Security = 24

IT courses used for this program may not be more than 10 years old, unless approved by division dean.

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

¹ ENG elective must be selected from the following: ENG 115 or ENG 116 or ENG 131.

INFORMATION SYSTEMS TECHNOLOGY: WEB DESIGN AND DEVELOPMENT

Career Studies Certificate **AL, AN, MA, WO**

Purpose: This career studies certificate provides the student with the aesthetic, technical and management knowledge required for the creation and management of well-designed and well-organized Web sites. This career studies certificate also prepares the student for the CIW Associate Certification and the CIW Associate Design Specialist Certification.

One Year Credits

1st Semester		
ITD	110 Web Design I	3
ITE	115 Introduction to Computer Applications and Concepts	3
ITE	130 Introduction to Internet ServicesI	3
ITP	100 Software Design	3
Total		12

2nd Semester		
ITD	210 Web Page Design II	3
ITE	170 Multimedia Software	3
ITP	100 Introduction to Telecommunications	3
ITP	225 Web Scripting Languages	4
Total		13

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 division dean.

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

INTERIOR DESIGN

Associate of Applied Science Degree **LO**

Purpose: The Interior Design program prepares students to become assistant designers or interior design technicians. The curriculum provides a foundation 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 course work.

Two Years Credits

1st Semester		
ART	101 History & Appreciation of Art I	3
ART	131 Fundamentals of Design I	4
ENG	111 College Composition I	3
IDS	100 Theory & Technology of Interior Design	3
¹ PED	116 Lifetime Fitness & Wellness	1
PSY	100 Principles of Applied Psychology	3
² SDV	Elective	1
Total		18

2nd Semester		
ART	102 History & Appreciation of Art II	3
³ ART	132 Fundamentals of Design II or Elective	3-4
CST	110 Introduction to Communication	3
IDS	105 Architectural Drafting for Interior Design	3
IDS	109 Styles of Furniture & Interiors	3
¹ PED/RPK	Elective	1
Total		16-17

3rd Semester		
IDS	106 Three Dimensional Drawing/Rendering	3
IDS	206 Lighting & Furnishings	3
IDS	225 Business Procedures	3
MTH	151 Math for the Liberal Arts I	3
⁴ _____	Social Science Elective	3
Total		15

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
⁵ IDS	290 Coordinated Internship	3
Total		16

Total credits for the A.A.S. Degree in Interior Design = 65-66

¹ 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.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

³ Electives 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.

⁴ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

⁵ For those students interested in transfer, an IDS elective may be substituted (with division approval) for the internship.



LIBERAL ARTS

Associate of Arts Degree **AL, AN, LO, MA, WO, ELI**

Purpose: The Associate of Arts degree major in Liberal Arts is designed for persons who plan to transfer to a four-year institution to complete a Bachelor of Arts Degree (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 transfer institution. The responsibility for proper course selection rests with the student.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
¹ ___	201 Foreign Language	3
² MTH	151 Math for the Liberal Arts I	3
³ ___	Natural Science/Lab Elective	4
⁴ PED	116 Lifetime Fitness & Wellness	1
⁵ SDV	Elective	1
Total		15
2nd Semester		
CST	110 Introduction to Communication or CST 126 Interpersonal Communication	3
⁶ ENG	112 College Composition II	3
¹ ___	202 Foreign Language	3
² MTH	152 Math for the Liberal Arts II	3
³ ___	Natural Science/Lab Elective	4
⁴ PED/RPK	Elective	1
Total		17
3rd Semester		
⁷ ENG	Literature Elective	3
⁸ ___	General Electives	6
⁹ HIS	Elective	3
¹⁰ ___	Social Science Elective	3
Total		15

4th Semester

⁸ ___	General Elective	4
⁹ HIS	Elective	3
¹¹ ___	Humanities/Fine Arts Elective	3
¹⁰ ___	Social Science Elective	3
Total		13

Total credits for the A.A. Degree in Liberal Arts = 60

- 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. 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 division dean.
- ² Any higher-level mathematics course may be substituted, see transfer requirements.
- ³ 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.
- ⁴ 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.
- ⁵ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ⁶ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.
- ⁷ Any 200-level literature course with an ENG prefix satisfies this requirement.
- ⁸ Consult your advisor for assistance in selecting general electives that will meet requirements of the institution to which you plan to transfer. In most cases, general electives should be selected from the approved courses listed under General Education Electives.
- ⁹ HIS 101–102 or HIS 121–122 are recommended.
- ¹⁰ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ¹¹ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

**LIBERAL ARTS:
ART HISTORY SPECIALIZATION**

Associate of Arts Degree **AL, AN, LO, MA, WO**

Purpose: The Art History specialization is designed for students who plan to transfer to a college or university for a Bachelor of Arts degree 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 transfer institution. The responsibility for proper course selection rests with the student.

Two Years		Credits
1st Semester		
ART	101 History & Appreciation of Art I	3
ENG	111 College Composition I	3
¹ ___	201 Foreign Language	3
² MTH	151 Math for the Liberal Arts I	3
³ PED	116 Lifetime Fitness & Wellness	1
⁴ SDV	Elective	1
Total		14
2nd Semester		
ART	102 History & Appreciation of Art II	3
CST	110 Introduction to Communication or CST 126 Interpersonal Communication	3
⁵ ENG	112 College Composition II	3
¹ ___	202 Foreign Language	3
² MTH	152 Math for the Liberal Arts II	3
³ PED/RPK	Elective	1
Total		16
3rd Semester		
⁶ ART	211 History of American Art I or Approved Art History Elective	3
⁷ ENG	Literature Elective	3
⁸ HIS	Elective	3
⁹ ___	Natural Science/Lab Elective	4
¹⁰ ___	Social Science Elective	3
Total		16
4th Semester		
⁶ ART	212 History of American Art II or Approved Art History Elective	3
⁸ HIS	Elective	3
¹¹ ___	Humanities/Fine Arts Elective	3
⁹ ___	Natural Science/Lab Elective	4
¹⁰ ___	Social Science Elective	3
Total		16

Total credits for the A.A. Degree in Liberal Arts with a Specialization in Art History = 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. 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 division dean.

² Any higher-level mathematics course may be substituted, see transfer requirements.

³ 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.

⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁵ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁶ Art History electives: ART 103–104, ART 211–212, ART 250 or other elective approved by the ART division.

⁷ Any 200-level literature course with an ENG prefix satisfies this requirement.

⁸ HIS 101–102 or HIS 121–122 are recommended.

⁹ 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.

¹⁰ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

¹¹ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

LIBERAL ARTS: INTERNATIONAL STUDIES SPECIALIZATION

Associate of Arts Degree **AL, AN, LO, MA, WO, ELI**

Purpose: The Liberal Arts A.A. degree with a specialization in International Studies is designed to prepare students who intend to transfer to a four-year institution to complete a bachelor's degree program in International Studies. The International Studies 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 transfer institution. The responsibility for proper course selection rests with the student.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
¹ ___	201 Foreign Language	3
² MTH	151 Math for the Liberal Arts I	3
³ ___	Natural Science/Lab Elective	4
⁴ PED	116 Lifetime Fitness & Wellness	1
⁵ SDV	Elective	1
Total		15
2nd Semester		
CST	229 Intercultural Communication	3
⁶ ENG	112 College Composition II	3
¹ ___	202 Foreign Language	3
² MTH	152 Math for the Liberal Arts II	3
³ ___	Natural Science/Lab Elective	4
⁴ PED/RPK	Elective	1
Total		17
3rd Semester		
ECO	201 Principles of Economics I	3
⁷ ENG	Literature Elective	3
⁸ ___	General Elective	3
⁹ HIS	Elective	3
¹⁰ ___	Non-western Requirement	3
Total		15
4th Semester		
ECO	202 Principles of Economics II	3
⁸ ___	General Elective	3
⁹ HIS	Elective	3
¹¹ ___	Humanities/Fine Arts Elective	3
¹⁰ ___	Non-western Requirement	3
Total		15

Total credits for the A.A. Degree in Liberal Arts with a Specialization in International Studies = 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. 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 division dean.

² Any higher-level mathematics course may be substituted; see transfer requirements.

³ 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.

⁴ 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.

⁵ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁶ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁷ Any 200-level literature course with an ENG prefix satisfies this requirement.

⁸ Social Science or Humanities recommended. Suggested courses include HUM 201–202, Survey of Western Culture; HUM 231–232, Survey of Asian Culture; or advanced language courses in history, literature, or civilization above the 202 designation (example: SPA 233–234, Introduction to Spanish Civilization and Literature). Consult your advisor.

⁹ HIS 101–102 or HIS 111–112 are recommended.

¹⁰ Students may choose from: ART 103–104, HIS 203, HIS 231–232, HIS 241–242, HIS 251–252, HIS 253–254, HIS 255, HIS 256, or REL 231–232, or other non-western courses approved by advisor.

¹¹ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

LIBERAL ARTS: PSYCHOLOGY SPECIALIZATION

Associate of Arts Degree **AL, AN, LO, MA, WO**

Purpose: The Psychology specialization is designed for students who plan to transfer to a college or university for a Bachelor of Arts degree 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 transfer institution. The responsibility for proper course selection rests with the student.

Two Years		Credits
1st Semester		
BIO	101 General Biology I	4
ENG	111 College Composition I	3
¹ MTH	151 Math for the Liberal Arts I	3
² PED	116 Lifetime Fitness & Wellness	1
PSY	201 Introduction to Psychology I	3
³ SDV	Elective	1
Total		15
2nd Semester		
BIO	102 General Biology II	4
CST	110 Introduction to Communication or CST 126 Interpersonal Communication	3
⁴ ENG	112 College Composition II	3
¹ MTH	152 Math for the Liberal Arts II	3
PSY	202 Introduction to Psychology II	3
Total		16
3rd Semester		
ENG	200-Level Literature Elective	3
⁵ ___	201 Foreign Language	3
⁶ HIS	Elective	3
² PED/RPK	Elective	1
PSY	211 Research Methodology for Behavioral Sciences	3
PSY	231 Life Span Human Development I	3
Total		16

4th Semester		
ENG	200-Level Literature Elective	3
⁵ ___	202 Foreign Language	3
⁶ HIS	Elective	3
PSY	213 Statistics for Behavioral Sciences	3
PSY	232 Life Span Human Development II	3
Total		15

Total credits for A.A. Degree in Liberal Arts with a Specialization in Psychology = 62

¹ Any higher-level mathematics course may be substituted; with advice of a counselor or faculty advisor to meet requirements of transfer institution.

² 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.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁵ 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. 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 division dean.

⁶ HIS 101–102 are recommended.

**LIBERAL ARTS:
SPEECH COMMUNICATION SPECIALIZATION**

Associate of Arts Degree **AL, AN, LO, MA, WO, ELI**

Purpose: The Liberal Arts major with the specialization in Speech Communication 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 transfer institution. The responsibility for proper course selection rests with the student.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
¹ ___	201 Foreign Language	3
² MTH	151 Math for the Liberal Arts I	3
³ ___	Natural Science/Lab Elective	4
⁴ PED	116 Lifetime Fitness & Wellness	1
⁵ SDV	Elective	1
Total		15
2nd Semester		
⁶ CST	Elective	3
⁷ ENG	112 College Composition II	3
¹ ___	202 Foreign Language	3
² MTH	152 Math for the Liberal Arts II	3
³ ___	Natural Science/Lab Elective	4
⁴ PED/RPK	Elective	1
Total		17

3rd Semester		
⁶ CST	Elective	3
⁸ ENG	Literature Elective	3
___	General Elective	1
⁹ HIS	Elective	3
¹⁰ ___	Social Science Elective	3
Total		13

4th Semester		
CSC	110 Introduction to Computing	3
CST	126 Interpersonal Communication or CST 227 Business and Professional Communication or CST 229 Intercultural Communication	3
⁹ HIS	Elective	3
¹¹ ___	Humanities/Fine Arts Elective	3
¹⁰ ___	Social Science Elective	3
Total		15

Total credits for the A.A. Degree in Liberal Arts with a Specialization in Speech Communication = 60

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. 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 division dean.

² Any higher-level mathematics course may be substituted; see transfer requirements.

³ 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.

⁴ 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.

⁵ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁶ The CST elective may be selected from the following: CST 100, 110, 115, 126, 227, or 229.

⁷ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁸ Any 200-level literature course with an ENG prefix satisfies this requirement.

⁹ HIS 101–102 or HIS 121–122 are recommended.

¹⁰ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

¹¹ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

LIBERAL ARTS: AFRICAN-AMERICAN STUDIES

Career Studies Certificate **AL**

Purpose: The program is specifically designed for degree seeking and non-degree seeking students who are interested in reviewing or developing in-depth understanding and appreciation of African American culture, history, and language. Other students will be able to enhance their employability in careers such as teaching or social service occupations.

Two Years **Credits**

1st Semester

¹ ENG	253 Survey of African-American Literature I	3
HIS	141 African-American History I	3
Total		6

2nd Semester

¹ ENG	254 Survey of African-American Literature II	3
HIS	142 African-American History II	3
Total		6

3rd Semester

HIS	203 History of African Civilization I	3
HIS	261 Topics in Cultural Ethnicity I	3
Total		6

4th Semester

HIS	204 History of African Civilization II	3
Total		3

Total credits for the African-American Studies Career Studies Certificate = 21

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

¹ Prerequisites for these courses are ENG 111 and 112.

LIBERAL ARTS: CHINESE STUDIES

Career Studies Certificate **AL**

Purpose: The program is specifically designed for both degree seeking and non-degree seeking students who are interested in reviewing or developing an in-depth understanding and appreciation of Chinese culture, history, and language. Other students will be able to enhance their employability in careers such as teaching or social service occupations.

Two Years **Credits**

1st Semester

CHI	101 Beginning Chinese I	5
¹ ENG	251 Survey of World Literature I (Focus on China)	3
Total		8

2nd Semester

CHI	102 Beginning Chinese II	5
HIS	255 History of Chinese Culture and Institutions	3
Total		8

3rd Semester

CHI	201 Intermediate Chinese I	4
² _____	Elective	3
Total		7

4th Semester

CHI	202 Intermediate Chinese II	4
Total		4

Total credits for the Chinese Studies 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.

¹ Prerequisites for this course are ENG 111 and 112.

² Elective may be selected from the following: ECO 210, International Economics; PSY 119, Cross-Cultural Psychology; CST 229, Intercultural Communication; ART 104, History of Far Eastern Art; SOC 255, Comparative Sociology; and GEO 220, World Regional Geography.

LIBERAL ARTS: JAPANESE STUDIES

Career Studies Certificate **AL**

Purpose: The program is specifically designed for both degree seeking and non-degree seeking students who are interested in reviewing or developing an in-depth understanding and appreciation of Japanese culture, history, and language. Other students will be able to enhance their employability in careers such as teaching or social service occupations.

Two Years **Credits**

1st Semester

¹ ENG	252 Survey of World Literature II (Focus on Japan)	3
JPN	101 Beginning Japanese I	5
Total		8

2nd Semester

HIS	256 Japanese Culture and Institutions	3
JPN	102 Beginning Japanese II	5
Total		8

3rd Semester

JPN	201 Intermediate Japanese I	4
² _____	Elective	3
Total		7

4th Semester

JPN	202 Intermediate Japanese II	4
Total		4

Total credits for the Japanese Studies 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.

¹ Prerequisites for this course are ENG 111 and 112.

² Elective may be selected from the following: ECO 210, International Economics; PSY 119, Cross-Cultural Psychology; CST 229, Intercultural Communication; ART 104, History of Far Eastern Art; SOC 255, Comparative Sociology; GEO 220, World Regional Geography.

LIBERAL ARTS: LATIN AMERICAN STUDIES

Career Studies Certificate

AL

Purpose: The program is specifically designed for both degree seeking and non-degree seeking students who are interested in reviewing or developing an in-depth understanding and appreciation of Latin American culture, history, and language. Other students will be able to enhance their employability in careers such as teaching or social service occupations.

Two Years **Credits****1st Semester**

HIS	231 History of Latin American Civilizations I	3
¹ SPA	102 Beginning Spanish II	5
Total		8

2nd Semester

² ENG	252 Survey of World Literature II (Focus on Latin America)	3
HIS	232 History of Latin American Civilizations II	3
Total		6

3rd Semester

³ ___	Elective	3
SPA	201 Intermediate Spanish I	3
Total		6

4th Semester

SPA	202 Intermediate Spanish II	3
Total		3

Total credits for the Latin American Career Studies Certificate = 23

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

¹ Prerequisite for this course is SPA 101 or proficiency equivalent.

² Prerequisites for this course are ENG 111 and 112.

³ Elective may be selected from the following: ECO 210, International Economics; PSY 119, Cross-Cultural Psychology; CST 229, Inter-cultural Communication; HIS 125, History of the American Indian; PLS 241–242, International Relations I–II; SOC 255, Comparative Sociology; and GEO 220, World Regional Geography.

LIBERAL ARTS: THEATRE

Career Studies Certificate

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 Introduction to Communication or CST 100 Principles of Public Speaking	3
CST	130 Introduction to Theatre or CST 141 Theatre Appreciation	3
CST	131 Acting I	3
Total		9

2nd Semester

CST	136 Theatre Workshop	3
* CST	Elective	3
* CST	Elective	3
Total		9

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.

Choose CST Electives from the list below:

CST 111	Voice and Diction I
CST 132	Acting II
CST 195	Special Topics Technical Theatre
CST 195	Special Topics Playwriting/Screenwriting
CST 231	History of Theatre I
CST 241	Introduction to Directing I
CST 251	Stage Lighting and Sound
CST 267	Creative Drama
CST 299	Supervised Study: Advanced Theatre Production

MARKETINGAssociate of Applied Science Degree **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. The occupational objectives 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, 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 faculty 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
1st Semester		
BUS	100 Introduction to Business	3
¹ ECO	120 Survey of Economics	3
ENG	111 College Composition I	3
ITE	115 Intro to Computer Applications & Concepts or ITD 110 Web Page Design I	3
MTH	151 Math for the Liberal Arts I	3
² PED	116 Lifetime Fitness & Wellness	1
³ SDV	Elective	1
Total		17
2nd Semester		
BUS	125 Applied Business Mathematics	3
⁴ ENG	112 College Composition II	3
MKT	200 Consumers/Marketing/Society	3
MKT	201 Introduction to Marketing	3
MKT	282 Principles of eCommerce or BUS 200 Principles of Management	3
⁵ _____	Social Science Elective	3
Total		18
3rd Semester		
ACC	211 Principles of Accounting I	3
BUS	201 Organizational Behavior	3
⁶ _____	Humanities/Fine Arts Elective	3
MKT	216 Retail Organization & Mgt.	3
MKT	228 Promotion	3
MKT	283 Ethical, Legal & Privacy Issues in eCommerce or BUS 241 Business Law I	3
Total		18
4th Semester		
BUS	205 Human Resource Management	3
⁷ CST	110 Intro to Communication	3
MKT	215 Sales & Marketing Management	3
MKT	221 Public Relations or MKT 275 International Marketing	3
MKT	227 Merchandise Buying & Control	3
² PED/RPK	Elective	1
Total		16

Total credits for the A.A.S. Degree in Marketing = 69

Students are encouraged to participate in the Cooperative Education Program for special career-related work experience.

- ¹ Students considering transfer may take ECO 201 or 202 after consulting with a faculty advisor.
- ² 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.
- ³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ⁴ ENG 116 Writing for Business or ENG 125 may be substituted with the advice of a counselor or faculty advisor.
- ⁵ The social science elective may be selected from the economics, geography, history, political science, psychology, or sociology (includes anthropology) courses listed under General Education Electives.
- ⁶ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.
- ⁷ CST 227 may be substituted.

MARKETING: eCOMMERCE SPECIALIZATIONAssociate of Applied Science Degree **AN**

Purpose: The curriculum is designed for persons who seek employment in the field of electronic marketing and sales through business-to-business and business-to-consumer transactions, and those entrepreneurs who want to move their business on to the Internet or start an Internet company. The occupational objectives include e-business account manager, direct marketing sales analyst, e-channel management specialist, web sales support coordinator, web site development and maintenance specialist, assistant manager of online communities, brand marketing specialist, advertising operations specialist, project lead analyst and Internet entrepreneur.

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

Two Years		Credits
1st Semester		
BUS	100 Introduction to Business	3
ENG	111 College Composition I	3
ITE	115 Introduction to Computer Applications & Concepts	3
MKT	201 Introduction to Marketing	3
MTH	151 Math for the Liberal Arts I	3
¹ SDV	Elective	1
Total		16
2nd Semester		
BUS	200 Principles of Management	3
² ECO	120 Survey of Economics	3
³ ENG	112 College Composition II	3
⁴ _____	Humanities/Fine Arts Elective	3
ITD	110 Web Page Design I	3
⁵ PED	116 Lifetime Fitness and Wellness	1
Total		16

3rd Semester		
BUS	201 Organizational Behavior	3
ITE	150 Desktop Database Software or ITD 210 Web Page Design II	3
MKT	228 Promotion	3
MKT	275 International Marketing or MKT Elective	3
MKT	282 Principles of eCommerce	3
⁵ PED/RPK	Elective	1
Total		16

4th Semester		
ACC	211 Principles of Accounting	3
CST	110 Introduction to Communication	3
MKT	Elective	3
MKT	215 Sales and Marketing Management	3
MKT	283 Social, Ethical & Legal Issues in eCommerce	3
⁶ ___	Social Science Elective	3
Total		18

Total credits for the A.A.S. Degree in Marketing with a Specialization in eCommerce = 66

Students are encouraged to participate in the Cooperative Education Program for special career-related work experience.

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² Students considering transfer should take ECO 201 or ECO 202.

³ ENG 116 Writing for Business or ENG 125 may be substituted with the advice of a counselor or faculty advisor.

⁴ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

⁵ 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.

⁶ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

MARKETING: INTERNATIONAL MARKETING SPECIALIZATION

Associate of Applied Science Degree **AN**

Purpose: The International Marketing Specialization is designed for persons who seek knowledge and employment in the field of international sales and marketing by means of traditional marketing methods and electronic commerce focusing on business-to-business and business-to-consumer transactions. The program will enable those already in marketing to update their skills in the field or prepare for advancement in their present job. Graduates may seek careers in the Federal Government or private industry under titles such as international marketing assistant/specialist or research analyst, international trade specialist, global product assistant manager, international sales support analyst, international business development analyst, international strategic planner, international product marketing manager, international marketing integration analyst and e-commerce entrepreneur. Students are encouraged to focus on a specific international region acquiring knowledge of the area, the people, their language and culture.

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 faculty 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

1st Semester		
BUS	100 Introduction to Business	3
¹ ECO	120 Survey of Economics	3
ENG	111 College Composition I	3
ITE	115 Introduction to Computer Applications & Concepts or ITD 110 Web Page Design I	3
MTH	151 Math for the Liberal Arts I	3
² PED	116 Lifetime Fitness & Wellness	1
³ SDV	Elective	1
Total		17

2nd Semester		
BUS	125 Applied Business Mathematics	3
BUS	200 Principles of Management	3
BUS	201 Organizational Behavior	3
⁴ ENG	112 College Composition II	3
MKT	201 Introduction to Marketing	3
Total		15

3rd Semester		
BUS	280 International Business	3
⁵ CST	110 Introduction to Communication	3
MKT	228 Promotion	3
MKT	282 Principals of eCommerce	3
⁶ ___	Social Science Elective	3
⁷ ___	Humanities/Fine Art Elective	3
Total		18

4th Semester		
MKT	215 Sales & Marketing Management	3
MKT	275 International Marketing	3
MKT	283 Social, Ethical & Legal Issues in eCommerce	3
MKT	Elective	3
MKT	Elective	3
² PED/RPK	Elective	1
Total		16

Total credits for the A.A.S. Degree in Marketing with a Specialization in International Marketing = 66

Students are encouraged to participate in the Cooperative Education Program for special career-related work experience.

¹ Students considering transfer may take ECO 201 or 202 after consulting with a faculty advisor.

² 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.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ ENG 116 Writing for Business or ENG 125 may be substituted with the advice of a counselor or faculty advisor.

⁵ CST 227 or 229 may be substituted.

⁶ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

⁷ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. A 200-level foreign language course is strongly recommended.

MARKETING: PUBLIC RELATIONS SPECIALIZATION

Associate of Applied Science Degree **AN**

Purpose: This curriculum is designed for persons who seek knowledge and employment in the field of marketing with a focus on communications and public relations, and who are interested in learning the practical skills needed to create effective public relations campaigns and media kits, along with how to write and edit a variety of publicity materials for traditional media formats and the Internet.

Graduates may seek careers in business, government, and not-for-profit organizations under titles such as employee relations, public affairs, investor relations, government affairs, media relations, corporate communication, event planning, marketing or product publicity, and consumer services or customer relations. Successful graduates will need to be enthusiastic self-starters, detail oriented, exhibit good computer skills, and able to communicate persuasively with excellent writing and presentation 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 faculty 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
1st Semester		
BUS	100 Introduction to Business	3
¹ ECO	120 Survey of Economics	3
ENG	111 College Composition I	3
ITE	115 Introduction to Computer Applications & Concepts	3
MTH	151 Math for Liberal Arts I	3
² SDV	Elective	1
Total		16
2nd Semester		
³ ENG	112 College Composition II	3
⁴ ENG	135 Applied Grammar or ENG Elective	3
⁵ ITD	110 Web Page Design I	3
MKT	201 Introduction to Marketing	3
⁶ ___	Social Science Elective	3
⁷ PED	116 Lifetime Fitness & Wellness	1
Total		16
3rd Semester		
⁴ ENG	121 Journalism I or ENG Elective	3
⁸ ___	Humanities/Fine Arts Elective	3
MKT	200 Consumers, Marketing & Society	3
MKT	216 Retail Organization or BUS 201 Organizational Behavior	3
MKT	228 Promotion	3
MKT	282 Principles of eCommerce	3
Total		18

4th Semester		
⁹ CST	110 Introduction to Communication	3
MKT	215 Sales and Marketing Management	3
MKT	221 Public Relations	3
MKT	283 Social, Ethical & Legal Issues in eComm.	3
MKT	Elective	3
⁷ PED/RPK	Elective	1
Total		16

Total credits for the A.A.S. Degree in Marketing with a Specialization in Public Relations = 66

Students are encouraged to participate in the Cooperative Education Program for special career-related work experience.

- ¹ Students considering transfer should take ECO 201 or 202.
- ² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ³ ENG 116 Writing for Business or ENG 125 may be substituted with the advice of a counselor or faculty advisor.
- ⁴ Preferred English Electives are ENG 122 Journalism II, and ELI courses ENG 123 Writing for the World Wide Web, and ENG 205 Technical Editing.
- ⁵ ITD 110 may be substituted with ENG 123 Writing for the World Wide Web.
- ⁶ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ⁷ 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.
- ⁸ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.
- ⁹ CST 100 or 227 may be substituted.

MARKETING: eCOMMERCE

Career Studies Certificate **AN**

Purpose: The one-year curriculum 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 eCommerce as a career and become acquainted with fundamental skills.

Preparation: Students should possess a proficiency in high school English.

One Year		Credits
1st Semester		
ENG	111 College Composition I or ENG elective	3
ITE	115 Introduction to Computer Applications & Concepts	3
MKT	201 Introduction to Marketing	3
SDV	Elective	1
Total		10
2nd Semester		
MKT	282 Principles of eCommerce	3
MKT	283 Ethical, Legal, & Privacy Issues in eCommerce or ITD 110 Web Page Design	3
Total		6
Total credits for the eCommerce Career Studies Certificate = 16		

MARKETING

 Career Studies Certificate **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**

1st Semester

ENG	111 College Composition I or ENG Elective	3
ITE	115 Introduction to Computer Applications & Concepts	3
MKT	201 Introduction to Marketing	3
MKT	228 Promotion	3
SDV	Elective	1
Total		13

2nd Semester

BUS	125 Applied Business Math	3
CST	110 Introduction to Communication	3
MKT	200 Consumers, Marketing and Society	3
MKT	215 Sales & Marketing Management	3
MKT	275 International Marketing or MKT 282 Principles of eCommerce	3
Total		15

Total credits for the Marketing Career Studies Certificate = 28

MARKETING: PROMOTION AND PUBLIC RELATIONS

 Career Studies Certificate **AN**

Purpose: This one-year curriculum 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.

Graduation requirements are certified by a faculty advisor at a campus offering this major.

One Year **Credits**

1st Semester

ENG	111 College Composition I	3
ITE	115 Introduction to Computer Applications & Concepts	3
MKT	201 Introduction to Marketing	3
SDV	Elective	1
Total		10

2nd Semester

ENG	116 Writing for Business or ENG Elective	3
MKT	221 Public Relations	3
MKT	228 Promotion	3
Total		9

Total credits for the Promotion and Public Relations Career Studies Certificate = 19

MARKETING: RETAIL MANAGEMENT

 Career Studies Certificate **AN**

Purpose: This curriculum is designed to offer students already employed in retail management the opportunity for improving skills and advancement on the job. For students interested in exploring retail 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

BUS	125 Applied Business Math	3
ENG	111 College Composition I or ENG Elective	3
MKT	201 Introduction to Marketing	3
MKT	216 Retail Organization and Management	3
SDV	Elective	1
Total		13

2nd Semester

BUS	201 Organizational Behavior	3
BUS	205 Human Resource Management	3
ITE	115 Introduction to Computer Applications & Concepts	3
MKT	227 Merchandise Buying & Control	3
MKT	275 International Marketing or MKT 282 Principles of eCommerce	3
Total		15

Total credits for Retail Management Career Studies Certificate = 28

MASSAGE THERAPY

Career Studies Certificate

MEC, WO

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, corporation 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.

Program Admission Requirements: Unless otherwise specified, applicants must meet all of the following requirements to be admitted to the program:

1. Be admitted to NOVA.
2. Be 18 years of age or older, or have assistant dean approval.
3. Qualify for or have completed ENG 111.
4. Have completed HLT 170 with a grade of "C" or better.
5. Have completed NAS 150 or NAS 161 or BIO 141 with a grade of "C" or better.
6. 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.
7. Full disclosure of any criminal background is required. Students with criminal convictions who do not self-disclose this information are subject to dismissal from the program.
8. Have completed a program information session and/or interview with the assistant dean/designated instructor and signed program guidelines.

Responsibilities of Massage Therapy Program

Students: The following are responsibilities of the student in the Massage Therapy program:

1. 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*.
2. 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.
3. 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.
4. 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 Requirement: 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
NAS	150 Human Biology or NAS 161 Health Science I or BIO 141 Human Anatomy & Physiology I	4
HLT	170 Introduction to Massage	1
Total		5

One Year		Credits
1st Semester		
CST	126 Interpersonal Communication	3
¹ HLT	105 Cardiopulmonary Resuscitation	1
HLT	180 Therapeutic Massage I	3
Total		7

2nd Semester		
HLT	190 Coordinated Internship	2
HLT	220 Concepts of Disease	3
HLT	280 Therapeutic Massage II	3
PED	116 Lifetime Fitness and Wellness	1
Total		9

3rd Semester		
HLT	195 Entrepreneurship for the Massage Therapist	1
HLT	281 Therapeutic Massage III	3
Total		4

Total credits for the Massage Therapy 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.

¹ HLT 105 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 A.A.S.

See Medical Education

MEETING, EVENT, AND EXHIBITION MANAGEMENT CERTIFICATE

See Hospitality Management

MUSIC

Associate of Arts Degree **AL, AN, LO**

Purpose: The Associate of Arts degree curriculum in Music offers an emphasis in fine arts. The Associate of Arts degree curriculum may be used by students who wish to transfer to a four-year college or university to complete the Bachelor of Arts degree 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 transfer institution. The responsibility for proper course selection rests with the student.

Special Curriculum Completion Requirements: Applied music students: Tuition fees are payable to the College. Studio charges are payable to applied music instructors. 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.

(For Fine Arts Emphasis)

Two Years Credits

1st Semester		
ENG	111 College Composition I	3
¹ ___	201 Foreign Language	3
MUS	Applied Music (Major)	2
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	111 Music Theory I	4
² PED	116 Lifetime Fitness & Wellness	1
³ SDV	Elective	1
Total		15

2nd Semester		
⁴ ENG	112 College Composition II	3
¹ ___	202 Foreign Language	3
MTH	151 Math for the Liberal Arts I	3
MUS	Applied Music (Major)	2
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	112 Music Theory II	4
² PED/RPK	Elective	1
Total		17

3rd Semester		
MTH	152 Math for the Liberal Arts II	3
MUS	Chorus/Band/Orchestra/Ensemble	1
⁵ ___	Natural Science/Lab Elective	4
⁶ ___	Social Science Electives	6
Total		14

4th Semester		
CST	110 Introduction to Communication	3
MUS	Chorus/Band/Orchestra/Ensemble	1
⁵ ___	Natural Science/Lab Elective	4
⁶ ___	Social Science Electives	6
Total		14

Total credits for the A.A. Degree in Music = 60

¹ 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 division dean.

² 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.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁵ 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.

⁶ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

MUSICAssociate of Applied Arts Degree **AL, AN, LO**

Purpose: The Associate of Applied Arts degree 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: The A.A.A. degree may also be accepted for transfer by some senior colleges and universities. NOVA has a formal articulation agreement for the A.A.A. degree in Music to transfer into George Mason University's Bachelor of Music degree with Education and Performance concentrations. See the current NOVA/GMU Bachelor of Music transfer sheet for more information. Students wishing to use the degree for transfer to other four-year institutions should consult with a counselor or faculty advisor regarding the transfer requirements of the institution of their choice.

Recommended Preparation: An interview with the music faculty may be required before beginning the program.

Special Curriculum Completion Requirements: Applied music students: Tuition fees are payable to the College. Studio charges are payable to applied music instructors. 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
¹ MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	111 Music Theory I	4
² PED	116 Lifetime Fitness & Wellness	1
³ _____	Social Science Elective	3
⁴ SDV	Elective	1
Total		16

2nd Semester

ENG	112 College Composition II	3
MTH	151 Math for the Liberal Arts I or MTH 152	3
MUS	Applied Music (major)	2
¹ MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	112 Music Theory II	4
² PED/RPK	Elective	1
³ _____	Social Science Elective	3
Total		18

3rd Semester

_____	General Elective	3
MUS	Applied Music (major)	2
¹ 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
Total		14

4th Semester

CST	110 Intro to Communication	3
⁵ _____	Humanities/Fine Arts Elective	3
MUS	Applied Music (major)	2
¹ 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
Total		17

Total credits for the A.A.A. Degree in Music = 65

¹ Class instruction such as Class Voice or Class Piano may be substituted.

² 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.

³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁵ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

MUSIC: JAZZ/POPULAR MUSIC SPECIALIZATIONAssociate of Applied Arts Degree **AL, AN, LO**

Purpose: The Associate of Applied Arts degree Jazz/Popular Music Specialization is designed for students who seek employment in performing Jazz and Popular Music.

Transfer Information: The A.A.A. degree may also be accepted for transfer by some senior colleges and universities. NOVA has a formal articulation agreement for the A.A.A. degree in Music to transfer into George Mason University's Bachelor of Music degree with Education and Performance concentrations. See the current NOVA/GMU Bachelor of Music transfer sheet for more information. Students wishing to use the degree for transfer to other four-year institutions should consult with a counselor or faculty advisor regarding the transfer requirements of the institution of their choice.

Recommended Preparation: An interview with the music faculty may be required before beginning the program.

Special Curriculum Completion Requirements: Applied music students: Tuition fees are payable to the College. Studio charges are payable to applied music instructors. 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
¹ MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	111 Music Theory I	4
² PED	116 Lifetime Fitness & Wellness	1
³ ___	Social Science Elective	3
⁴ SDV	Elective	1
Total		16
2nd Semester		
ENG	112 College Composition II	3
MTH	151 Math for the Liberal Arts I	3
MUS	Applied Music (major)	2
¹ MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	112 Music Theory II	4
² PED/RPK	Elective	1
³ ___	Social Science Elective	3
Total		18
3rd Semester		
CST	110 Introduction to Communication	3
___	General Elective	2
MUS	Applied Music (major)	2
¹ MUS	Applied Music (minor)	1
MUS	Chorus/Band/Orchestra/Ensemble	1
MUS	159 Improvisational Techniques	3
MUS	213 Composition I	3
Total		15
4th Semester		
⁵ ___	Humanities/Fine Arts Elective	3
MUS	Applied Music (major)	2
¹ 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 Adv. Improvisational Tech.	3
Total		16

Total credits for the A.A.A. Degree in Music with a Specialization in Jazz/Popular Music = 65

¹ Class instruction such as Class Voice or Class Piano may be substituted.

² 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.

³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

⁴ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁵ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

MUSIC RECORDING TECHNOLOGY

Certificate **LO**

Purpose: The Music Recording Technology curriculum is designed for persons who seek employment as music recording technicians. Occupational objectives include development for positions as assistants and aides in recording studios, broadcast studios, television studios, myriad other recording enterprises (e.g., Musak), and countless private studios in the recording industry.

Recommended Preparation: A personal interview with a program faculty member.

One Year Credits

1st Semester		Credits
ENG	111 College Composition I	3
MTH	151 Math for Liberal Arts I	3
MUS	130 Overview of the Recording Ind.	1
MUS	140 Introduction to Recording Technology	3
MUS	157 Sound Studio Design	3
MUS	158 Recording Studio Electronics: Theory and Maintenance	3
¹ SDV	Elective	1
Total		17

2nd Semester		Credits
BUS	165 Small Business Management	3
ENG	112 College Composition II	3
MUS	179 Music Copyright Law	1
MUS	227 Editing & Mixdown Technology	3
MUS	235 Advanced Recording Technology	3
MUS	288 Recording Problems Seminar	2
PSY	120 Human Relations	3
Total		18

3rd Semester		Credits
MUS	290 Coordinated Internship	3
Total		3

Total credits for the Music Recording Technology Certificate = 38

¹ Students can take SDV 100 College Success Skills or SDV 101 Orientation section related to their particular program.

NURSING A.A.S.

See Medical Education

PARALEGAL STUDIESAssociate of Applied Science Degree **AL**

Purpose: The curriculum is designed to provide an individual with a sufficient level of knowledge, understanding, and proficiency to perform the tasks in meeting a client's needs which can be performed by a trained, non-lawyer assistant working under the direction and supervision of a lawyer. A legal assistant will have a basic understanding of the general processes of American law, and will have the knowledge and proficiency to perform specific tasks under the supervision of a lawyer in the fields of civil and criminal law. The occupational objectives include: employment in public and in private, both individual and corporate, law-related activities, organizations and agencies.

Recommended Preparation: Proficiency in high school English.

Completion Requirements: To remain in the program, students must complete each of the legal courses in the program with a "C" or better. No more than 50% of the paralegal studies credits required for the AAS degree program, approved by the American Bar Association, may be transferred from another college. Case-by-case exceptions may be made at the discretion of the assistant dean for paralegal studies.

Special Approval Status: The Paralegal Studies program is approved by the American Bar Association.

Two Years Credits**1st Semester**

ENG	111 College Composition I	3
LGL	110 Introduction to Law & the Legal Asst.	3
LGL	117 Family Law	3
LGL	125 Legal Research	3
¹ PED	116 Lifetime Fitness & Wellness	1
² PHI	115 Practical Reasoning	3
³ SDV	Elective	1
Total		17

2nd Semester

ENG	112 College Composition II	3
LGL	126 Legal Writing	3
LGL	215 Torts	3
LGL	218 Criminal Law	3
⁴ MTH	151 Math for the Liberal Arts I	3
¹ PED/RPK	Elective	1
Total		16

3rd Semester

⁵ _____	Approved Elective	3
ITE	115 Introduction to Computer Applications & Concepts	3
LGL	115 Real Estate Law	3
LGL	217 Trial Practice & the Law of Evidence	3
LGL	235 Legal Aspects of Business Organization	3
PSY	201 Introduction to Psychology I or SOC 201 Introduction to Sociology I	3
Total		18

4th Semester

⁵ _____	Approved Elective	2
CST	110 Introduction to Communication	3
LGL	225 Estate Planning & Probate	3
LGL	230 Legal Transactions	3
PSY	202 Introduction to Psychology II or SOC 202 Introduction to Sociology II	3
Total		14

Total credits for the A.A.S. Degree in Paralegal Studies = 65

¹ 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.

² Any PHI course numbered 100 or above may be substituted.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ Any higher level MTH course or a science course (BIO, CHM, GOL, NAS, PHY) may be substituted.

⁵ Elective courses should be selected after consultation with a counselor or faculty advisor, and should be designed to further a student's career and educational goals.

PHLEBOTOMY: CAREER STUDIES CERTIFICATE

See Medical Education

PHOTOGRAPHYAssociate of Applied Science Degree **AL**

Purpose: The curriculum is designed to prepare students for diverse career options within the field of photography and digital imaging. Course work 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.

Two Years Credits**1st Semester**

ART	121 Drawing I or ART 131 Fundamentals of Design I	4
ENG	111 College Composition I	3
¹ PED	116 Lifetime Fitness & Wellness	1
PHT	100 Introduction to Photography or PHT 101 Photography I	3
PHT	110 History of Photography	3
² SDV	Elective	1
Total		15

2nd Semester

ART	122 Drawing II or ART 132 Fundamentals of Design II	4
CST	110 Introduction to Communication	3
_____	General Elective	3
MTH	151 Math for the Liberal Arts I	3
¹ PED/RPK	Elective	1
PHT	102 Photography II or PHT 135 Electronic Darkroom	3
Total		17

3rd Semester		
ART	101 History and Appreciation of Art I	3
PHT	130 Video I	3
PHT	270 Digital Imaging I	3
PHT	Elective	3
³ _____	Social Science Elective	3
Total		15

4th Semester		
ART	102 History & Appreciation of Art II	3
227	Photographic Careers	3
PHT	271 Digital Imaging II	3
PHT	Electives	6
³ _____	Social Science Elective	3
Total		18

Total credits for the A.A.S. Degree in Photography = 65

¹ 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.

² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

PHYSICAL THERAPIST ASSISTANT A.A.S.

See Medical Education

PROFESSIONAL WRITING FOR BUSINESS, GOVERNMENT, AND INDUSTRY

Certificate **AL, AN, LO, MA, WO**

Purpose: This certificate program prepares participants to write with expertise in professional contexts. The curriculum provides skills needed by currently employed or potential writers in business, government, and industry. Writers will acquire a sound foundation in composing, editing, and formatting on computers, as well as a comprehensive grounding in grammar and punctuation. Additional courses which may be chosen as electives include instruction in journalism, technical report writing, writing for publication, writing for the Web, and intercultural communication.

Special Curriculum Completion Requirements:

The student must complete a minimum of nine credits of computer-intensive courses. Computer-intensive courses are defined as those taught on the Web and through distance learning with extensive use of computer instruction and those taught on campus in which an individual computer is provided for each student's instruction.

One Year		Credits
1st Semester		
CST	110 Introduction to Communication or CST 115 Small Group Communication	3
¹ ENG	111 College Composition I	3
¹ ENG	115 Technical Writing	3
ENG	121 Introduction to Journalism I	3
² _____	Elective	3
³ SDV	Elective	1
Total		16

2nd Semester		
¹ ENG	116 Writing for Business	3
ENG	123 Writing for the World Wide Web	3
¹ ENG	135 Applied Grammar or ENG 295 Topics in: Editing for the Professional	3
ENG	280 Writing User Manuals or ENG 295 Topics in: Editing for the Professional or Writing Grants and Proposals	3
ENG	290 Coordinated Internship or ENG 297 Cooperative Education or ENG 298 Seminar and Project	3
Total		15

Total credits for the Professional Writing for Business, Government, and Industry Certificate = 31

¹ This course may be offered as computer-intensive, with an individual computer provided for each student's instruction.

² Electives should be selected in consultation with a faculty advisor. Those elective courses most appropriate for the professional writing program are ENG 122, ENG 131, ENG 210, ENG 221, ENG 222, ENG 295 (professional writing-related topic) and CST 229.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

RADIOGRAPHY A.A.S.

See Medical Education

REAL ESTATE BROKERAGE

Certificate **AN**

Purpose: The curriculum is designed for present or future practitioners in the profession who wish to improve or acquire understanding and knowledge of essential real estate subjects.

Recommended Preparation: Proficiency in high school English and background in basic arithmetic operations.

One Year		Credits
1st Semester		
BUS	100 Introduction to Business	3
ENG	111 College Composition I	3
REA	100 Principles of Real Estate	4
REA	217 Real Estate Finance	3
¹ SDV	Elective	1
Total		14
2nd Semester		
REA	215 Real Estate Brokerage	3
REA	216 Real Estate Appraisal	3
REA	245 Real Estate Law	3
REA	Elective	4
² _____	Social Science Elective	3
Total		16

Total credits for the Real Estate Brokerage Certificate = 30

¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

REAL ESTATE BROKERAGECareer Studies Certificate **AN**

Purpose: The curriculum is designed to cover the courses necessary to sit for the Virginia Real Estate Broker's Licensing Exam.

One Year Credits**1st Semester**

¹ ENG/CST Elective	3
REA 100 Principles of Real Estate	4
REA 215 Real Estate Brokerage	3
Total Credits	10

2nd Semester

REA 216 Real Estate Appraisal	3
REA 217 Real Estate Finance	3
REA 245 Real Estate Law	3
Total Credits	9

Total credits for the Real Estate Brokerage 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.

¹ The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.

REAL ESTATE RESIDENTIAL APPRAISALCareer Studies Certificate **AN**

Purpose: This program is designed to prepare students to sit for the Certified Residential Appraiser exam required for licensing by the federal Appraisal Qualifications Board. The program complies with the requirements adopted by the Appraisal Qualification Board effective January 1, 2008. In addition to completing this program, students must take the USPAP course through continuing education to qualify for the Virginia Certified Residential Appraiser License. Students must also have an associate degree or higher from an accredited college. In lieu of the required degree, 21 semester credit hours covering the following subject matter must be completed: English composition; principles of economics (micro or macro); finance; algebra, geometry or higher mathematics; statistics, computer science; and business or real estate law. Students must also complete an apprenticeship for this class of license.

One Year Credits**1st Semester**

¹ ENG/CST Elective	3
² REA 198 Seminar and Project	1
REA 216 Real Estate Appraisal	3
REA 217 Real Estate Finance	3
Total	10

2nd Semester

BUS 220 Introduction to Business Statistics	3
REA 218 Appraising the Single Family Res.	3
REA 236 State Certified Residential Appraiser	1
³ REA 298 Seminar and Project	2
Total	9

Total credits for the Real Estate Residential Appraisal 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.

¹ The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.

² REA 216 is a prerequisite for REA 198. Courses will be offered in 8-week sessions to allow this.

³ REA 198 and REA 218 are prerequisites for REA 298.

RESPIRATORY THERAPY A.A.S.

See Medical Education



SCIENCE

Associate of
Science Degree

AL, AN, LO, MA, WO, ELI

Purpose: The curriculum is designed for persons 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 program with a major in one of the following fields: agriculture, biology, chemistry, pre-dentistry, forestry, geology, home economics, nursing, 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 requirements of the institution to which transfer is intended. 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
1st Semester		
CSC	110 Introduction to Computing	3
ENG	111 College Composition I	3
¹ HIS	Elective	3
² MTH	271 Applied Calculus I or MTH 173 Calculus with Analytic Geometry I	3–5
^{3,4} _____	Science with Laboratory	4
⁵ SDV	Elective	1
Total		17–19
2nd Semester		
⁶ ENG	112 College Composition II	3
² MTH	272 Applied Calculus II or MTH 174 Calculus with Analytic Geometry II	3–5
⁷ PED	116 Lifetime Fitness & Wellness	1
⁷ PED/RPK	Elective	1
^{3,4} _____	Science with Laboratory	4
⁸ _____	Social Science Elective	3
Total		15–17
3rd Semester		
_____	General Elective	3
⁹ _____	Humanities/Fine Arts Elective	3
^{3,4} _____	Science with Laboratory	4
^{3,4} _____	Science with Laboratory	4
⁸ _____	Social Science Elective	3
Total		17
4th Semester		
CST	110 Introduction to Communication	3
⁹ _____	Humanities/Fine Arts Elective	3
^{3,4} _____	Science with Laboratory	4
^{3,4} _____	Science with Laboratory	4
Total		14

Total credits for the A.S. Degree in Science = 63–67

Twenty-four of these credits must be taken in laboratory science courses for transfer to a four-year institution with a major in Science.

¹ HIS 101, 102, 121 or 122 is recommended. Although not required, students are encouraged to take a two-semester sequence in history, depending on the requirements of the transfer institution.

² MTH 173–174 is required for students planning a four-year major in Physics or Chemistry. MTH 271 plus one semester of statistics may be taken by Biology majors. Students not adequately prepared for MTH 173 may be required to take MTH 166 or MTH 163–164. Students must see their counselor/advisor before choosing a math as transfer institutions have a wide range of requirements.

³ Sciences (with laboratories) may be selected from the following: BIO 101 102, BIO 107, BIO 110, BIO 120, or BIO 141–142, CHM 111–112, PHY 201–202, PHY 231–232, PHY 241–242, PHY 243, GOL 105–106, or any 200-level biology, chemistry, geology, or physics course.

⁴ Students who plan to major in Chemistry should elect CHM 111–112 and CHM 241–242 and CHM 245–246 plus 2 two-semester sequences from the following: BIO 101–102, BIO 110, BIO 120, GOL 105–106, GOL 111–112, or any 200-level biology, chemistry, geology, or physics course. Students who plan to major in Physics and Engineering should select PHY 231–232 or PHY 241–242 plus CHM 111–112 and 1 two-semester sequence from the following BIO 101–102, BIO 110–120, GOL 105–106, GOL 111–112, or any 200 level Biology, Chemistry, or Geology course (physics majors include PHY 243). Math requirement: MTH 173–174. MTH 277, MTH 285, MTH 291–292.

⁵ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁶ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁷ 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.

⁸ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. Base selection on requirements of transfer institution.

⁹ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.



SCIENCE: MATHEMATICS SPECIALIZATION

Associate of
Science Degree **AL, AN, LO, MA, WO, ELI**

Purpose: The curriculum is designed for persons 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 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
1st Semester		
CSC	110 Introduction to Computing	3
ENG	111 College Composition I	3
¹ HIS	Elective	3
MTH	173 Calculus with Analytic Geometry I	5
² ___	Social Science Elective	3
³ SDV	Elective	1
Total		18
2nd Semester		
CSC	130 Scientific Programming or MTH 286 Discrete Mathematics	3-4
⁴ ENG	112 College Composition II	3
MTH	174 Calculus with Analytic Geometry II	5
² ___	Social Science Elective	3
Total		14-15
3rd Semester		
⁵ ___	Humanities/Fine Arts Elective	3
MTH	277 Vector Calculus	4
⁶ MTH	Elective	3
⁷ ___	Natural Science/Lab Elective	4
⁸ PED	116 Lifetime Fitness & Wellness	1
Total		15

4th Semester		
CST	110 Introduction to Communication	3
⁵ ___	Humanities/Fine Arts Elective	3
⁶ MTH	Elective	3-4
⁷ ___	Natural Science/Lab Elective	4
⁸ PED/ RPK	Elective	1
Total		14-15

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.

¹ HIS 101, 102, 121, or 122 recommended. Although not required, students are encouraged to take a two-semester sequence in history, depending on the requirements of the transfer institution.

² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives. Base selection on requirements of transfer institution.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁵ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

⁶ Math electives should be chosen carefully from 200-level courses and after investigation of requirements of the institution to which transfer is intended.

⁷ 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.

⁸ 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.

SECURITY MANAGEMENT CAREER STUDIES CERTIFICATE

See Administration of Justice

SMALL BUSINESS MANAGEMENT CERTIFICATE

See Business Management

SOCIAL SCIENCESAssociate of
Science Degree**AL, AN, LO, MA, WO, ELI**

Purpose: The Associate of Science degree in Social Sciences is designed for persons who plan to transfer to a four-year college or university to complete a Bachelor of Science Degree (B.S.) in one of the social sciences. It also prepares students for some teacher certification programs. Students from the AS degree 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
¹ HIS	Elective	3
² MTH	151 Math for the Liberal Arts I or higher level MTH	3
³ ___	Natural Science/Lab Elective	4
⁴ PED	116 Lifetime Fitness & Wellness	1
⁵ SDV	Elective	1
Total		15
2nd Semester		
⁶ ENG	112 College Composition II	3
⁷ ___	Social Science Elective	3
² MTH	152 Math for the Liberal Arts II or higher level MTH	3
³ ___	Natural Science/Lab elective	4
ITE	115 Introduction to Computer Applications & Concepts	3
Total		16
3rd Semester		
CST	110 Introduction to Communication or CST 126 Interpersonal Communication or CST 229 Intercultural Communication	3
⁸ ___	Humanities/Fine Arts Elective	3
⁴ PED/RPK	Elective	1
⁹ SOC	Elective	3
⁷ ___	Social Science Electives	6
Total		16
4th Semester		
⁸ ___	Humanities/Fine Arts Elective	3
¹⁰ ___	General Education Electives	9
⁷ ___	Social Science Electives	3
Total		15

Total credits for the A.S. Degree in Social Sciences = 62

¹ HIS 101 or 102 are recommended to meet the Western Civilization requirement at many universities.

² Many universities require MTH 151 or higher while others require MTH 163 or 166 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.

³ 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.

⁴ 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.

⁵ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁶ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁷ The social science elective may be selected from the social/behavioral sciences 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.

⁸ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or faculty advisor to meet requirements of the transfer institution.

⁹ SOC 201, 202, 211 or 212 are recommended to meet the Sociology requirement at many universities.

¹⁰General Education Electives may be met by one of the courses listed under General Education Electives.



SOCIAL SCIENCES: DEAF STUDIES SPECIALIZATION

Associate of Science Degree **AN**

Purpose: This program is designed for persons who plan to transfer to a four-year college or university to complete a Bachelor of Science Degree (B.S.) 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 & 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
CST	110 Introduction to Communication or CST 126 Interpersonal Communication or CST 229 Intercultural Communication	3
ENG	111 College Composition I	3
¹ MTH	151 Math for the Liberal Arts I or higher level MTH	3
² SDV	Elective	1
Total		15

2nd Semester

ASL	125 History and Culture of the Deaf Community	3
ASL	262 American Sign Language VI	3
³ ENG	112 College Composition II	3
¹ MTH	152 Math for the Liberal Arts II or higher-level MTH	3
⁴ PED	116 Lifetime Fitness & Wellness	1
⁵ _____	Social Science Elective	3
Total		16

3rd Semester

ITE	115 Introduction to Computer Applications & Concepts	3
⁶ HIS	Elective	3
⁷ _____	Humanities/Fine Arts Elective	3
⁸ SOC	Elective	3
⁹ _____	Natural Science/Lab Elective	4
Total		16

4th Semester

ASL	225 Literature of the US Deaf Community	3
⁹ _____	Natural Science/Lab Elective	4
⁴ PED/RPK	Elective	1
⁵ _____	Social Science Electives	6
Total		14

Total credits for the A.S. Degree in Social Sciences with a Specialization in Deaf Studies = 61

- Many universities require MTH 151 or higher while others require MTH 163 or 166 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.
- Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.
- 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.
- The social science elective may be selected from the social/behavioral sciences 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 or 102 are recommended to meet the Western Civilization requirement at many universities.
- Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or faculty advisor to meet requirements of the transfer institution.
- SOC 200 or 201 are recommended to meet the Sociology requirement at many universities.
- 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.

SOCIAL SCIENCES: POLITICAL SCIENCE SPECIALIZATION

Associate of Science Degree

AL

Purpose: This program is designed for persons 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 with 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
1st Semester		
ENG	111 College Composition I	3
¹ HIS	Elective	3
² MTH	151 Math for the Liberal Arts I or higher level	3
PLS	120 Intro to Political Science	3
PLS	135 American National Politics or PLS 241 International Relations I	3
³ SDV	Elective	1
Total		16
2nd Semester		
⁴ ENG	112 College Composition II	3
² MTH	152 Math for the Liberal Arts II or higher-level MTH	3
⁵ ___	Natural Science/Lab Elective	4
ITE	115 Intro to Computer Applications & Concepts	3
⁶ PLS	136 State and Local Politics or see Footnote 6	3
Total		16
3rd Semester		
⁷ ___	Humanities/Fine Arts Elective	3
CST	110 Introduction to Speech Communication or CST 126 Interpersonal Communication or CST 229 Intercultural Communication	3
⁵ ___	Natural Science/Lab Elective	4
⁸ PLS	Elective	3
⁹ SOC	Elective	3
Total		16
4th Semester		
⁷ ___	Humanities/Fine Arts Elective	3
¹⁰ ___	General Education Elective	3
¹¹ PED	116 Lifetime Fitness & Wellness	2
⁸ PLS	Elective	3
¹² ___	Social Science Elective	3
Total		14

Total credits for the A.S. Degree in Social Sciences with a Specialization in Political Science = 62

¹ HIS 101 or 102 are recommended to meet the Western Civilization requirement at many universities. Other HIS courses may be chosen from the list of approved general education courses.

² Many universities require MTH 151 or higher while others require MTH 163 or 166 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.

³ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.

⁴ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁵ 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.

⁶ Students who take PLS 135 American National Politics must also take PLS 136 State and Local Politics. Students who take PLS 241 International Relations I, must also choose from one of the following courses: PLS 242 International Relations II; PLS 140 Intro to Comparative Politics; PLS 200 Political Ideologies; PLS 250 Intro to Conflict Resolution; PLS 255 Intro to Peace and Stability Operations; or SSC 115 Intro to Global Affairs.

⁷ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or faculty advisor to meet requirements of the transfer institution. Students who plan to transfer into a BA program should take intermediate-level foreign language to fulfill these electives.

⁸ PLS electives include any of the following: PLS 135 American National Politics; PLS 136 State and Local Politics; PLS 140 Intro to Comparative Politics; PLS 200 Political Ideologies; PLS 211 US Government I; PLS 212 US Government II; PLS 220 Political Parties and Elections in the US; PLS 225 US Presidency; PLS 230 Congress of the US; PLS 241 International Relations I; PLS 242 International Relations II; PLS 250 Intro to Conflict Resolution; PLS 255 Intro to Peace and Stability Operations; and SSC 115 Intro to Global Affairs.

⁹ SOC 201, 202, 211 or 212 are recommended to meet the Sociology requirement at many universities.

¹⁰ General Education Electives may be met by one of the courses listed under General Education Electives.

¹¹ 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.

¹² The social science elective may be selected from the social/ behavioral sciences 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 **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 degree 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 transfer institution. The responsibility for proper course selection rests with the student.

Two Years		Credits
1st Semester		
BIO	101 General Biology I	4
ENG	111 College Composition I	3
¹ MTH	151 Mathematics for the Liberal Arts I	3
² PED	116 Lifetime Fitness & Wellness	1
PSY	201 Introduction to Psychology I	3
³ SDV	Elective	1
Total		15
2nd Semester		
BIO	102 General Biology II	4
⁴ ENG	112 College Composition II	3
ITE	115 Introduction to Computer Applications & Concepts	3
¹ MTH	152 Mathematics for the Liberal Arts II	3
PSY	202 Introduction to Psychology II	3
Total		16
3rd Semester		
CST	110 Introduction to Communication or CST 126 Interpersonal Communication	3
ENG	200-Level Literature Elective	3
HIS	Elective	3
PSY	211 Research Methodology for Behavioral Sciences	3
PSY	231 Life Span Human Development I	3
Total		15
4th Semester		
ENG	200-Level Literature Elective	3
⁵ ___	Humanities/Fine Arts Elective	3
² PED/RPK	Elective	1
PSY	213 Statistics for Behavioral Sciences	3
PSY	232 Life Span Human Development II	3
⁶ ___	Social Science Elective	3
Total		16

Total credits for the A.S. Degree in Social Sciences with a Specialization in Psychology = 62

¹ Any higher-level mathematics course may be substituted with advice of a counselor or faculty advisor to meet requirements of transfer institution.

² 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; PED 116, 1 cr. plus RPK activities course. PED is offered as both a 1-credit and a 2-credit course.

³ Students can take SDV 100 College Success Skills or SDV 101 Orientation section related to their particular program.

⁴ ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.

⁵ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet requirements of transfer institution.

⁶ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

SOCIAL SCIENCES: TEACHER EDUCATION SPECIALIZATION

Associate of Science Degree **AL, AN, LO, MA, WO**

Purpose: This curriculum prepares students to transfer to a 4-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.

Transfer Information: Several senior institutions in Virginia helped develop this curriculum and have agreed to accept all courses required by it. 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, and pass the PRAXIS I exam. Students are strongly encouraged to take the PRAXIS I exam shortly after completing their English composition and math requirements. The student, working directly with an NOVA Teacher Education Specialization Advisor/Counselor, must complete a Transfer Letter of Agreement.

Two Years		Credits
1st Semester		
BIO	101 General Biology I	4
ENG	111 College Composition I	3
HIS	121 United States History I	3
HLT	110 Concepts of Personal & Community Health	3
¹ MTH	151 Mathematics for the Liberal Arts I	3
SDV	101 Orientation to Education	1
Total		17
2nd Semester		
BIO	102 General Biology II	4
² ENG	112 College Composition II	3
HIS	122 United States History II	3
ITE	115 Introduction to Computer Applications & Concepts or CSC 110 Introduction to Computing	3
¹ MTH	152 Math for the Liberal Arts	3
Total		16
3rd Semester		
CST	110 Intro to Communication	3
ECO	201 Principles of Macroeconomics or ECO 202 Principles of Microeconomics	3
EDU	200 Introduction to Teaching as a Profession	3
³ ENG	200-Level Literature Elective	3
⁴ ___	General Elective	3
Total		15
4th Semester		
GEO	210 People & the Land: Introduction to Cultural Geography	3
HIS	101 History of Western Civilization I or HIS 102 History of Western Civilization II	3
PLS	135 American National Politics	3
⁵ ___	Humanities/Fine Arts Elective	3
⁵ ___	Humanities/Fine Arts Elective	3
Total		15

Total credits for the A.S. Degree in Social Sciences with a Specialization in Teacher Education = 63

¹ Students should make choices after consulting with Teacher Education Specialization Faculty Advisor/Counselor on the specific requirements at the four-year Virginia institution to which they plan to transfer.

- ² ENG 125 may be substituted with the advice of a counselor or faculty advisor according to requirements of transfer institutions.
- ³ The English literature elective may be chosen from ENG 241, 242, 243, 244, 251, or 252.
- ⁴ The general elective should be selected 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 202; foreign language, PSY 230; REL 231 or 232.
- ⁵ The humanities/fine arts elective may be chosen from ART 101, ART 102, ART 105, MUS 121 or MUS 122.

**SUBSTANCE ABUSE
REHABILITATION COUNSELOR**

Certificate **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 desiring 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. For further information, contact the Alexandria Campus Cooperative Education Office.

One Year Credits

1st Semester		
ENG	111 College Composition I or CST 110 Introduction 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
¹ SDV	Elective	1
Total		19

2nd Semester		
HMS	142 Group Dynamics II	3
HMS	145 Effects of Psychoactive Drugs	3
HMS	252 Substance Abuse II	3
HMS	258 Case Management & Substance Abuse	3
HMS	290 Coordinated Internship	3
² _____	Social Science Elective	3
Total		18

Total credits for the Substance Abuse Rehabilitation Counselor Certificate = 37

- ¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

TEACHER EDUCATION SPECIALIZATION A.S.

See Social Sciences A.S.

THEATRE CAREER STUDIES CERTIFICATE

See Liberal Arts

TRAVEL AND TOURISM

Certificate **AN**

Purpose: The curriculum is designed for persons seeking careers in the field of travel and tourism and to develop and update the skills of present travel industry employees. Career opportunities for graduates exist in travel agencies, airlines and other transportation companies, as well as in hotels and other businesses serving the traveling public. The certificate courses are also applicable to the A.A.S. degree in Travel and Tourism.

One Year Credits

1st Semester		
ENG	111 College Composition I	3
¹ _____	Social Science Elective	3
² SDV	Elective	1
TRV	100 Introduction to the Travel Industry	3
TRV	111 Geography of Tourism I	3
³ TRV	125 Travel Sales & Customer Service	3
Total		16

2nd Semester		
³ TRV	115 Ground Transportation, Tours, Cruises, & Services Planning	3
TRV	112 Geography of Tourism II	3
TRV	Electives	8
Total		14

Total credits for the Travel and Tourism Certificate = 30

- ¹ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ² Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ³ Prerequisite for this course is TRV 100.

TRAVEL AND TOURISM: TOUR GUIDING

Career Studies Certificate

AN

Purpose: The curriculum is designed to prepare students for the challenges and rewards of a career in the tour guiding and tour management profession. As domestic and international tourism grows in the metropolitan Washington D.C./Northern Virginia region, so does the need for educated, well-trained tour guides and tour managers. The courses in this curriculum will prepare students to take the exam required to become a licensed tour guide in Washington D.C. and are also applicable to the A.A.S. degree in Travel and Tourism.

One Year		Credits
1st Semester		
CST	Elective	1
TRV	100 Introduction to the Travel Industry	3
TRV	111 Geography of Tourism I	3
¹ TRV	125 Travel Sales and Customer Service	3
TRV	138 Regional Tour Guiding I	3
Total		13
2nd Semester		
CST	110 Introduction to Communication	3
TRV	136 Tour Guiding and Management	3
TRV	139 Regional Tour Guiding II	3
TRV	190 Internship or TRV Elective	1
Total		10

Total credits for the Tour Guiding Career Studies Certificate = 23

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

¹ Co-requisite/prerequisite for this course is TRV 100.

VASCULAR SONOGRAPHY SPECIALIZATION

See Medical Education:
Diagnostic Medical Sonography

VETERINARY TECHNOLOGY

Associate of Applied Science Degree

LO

Purpose: The curriculum will prepare the student for a career as a veterinary technician. Satisfactory completion of the curriculum will make the student eligible to take State Board and National Board examinations for certification as a veterinary technician. The curriculum is broad based and includes both practical and theoretical course work which prepares the student for employment in various areas of animal health care, including veterinary hospitals and research and diagnostic laboratories. There is a part-time online and a full-time on-site option.

Special Curriculum Admission Requirements: The Veterinary Technology program accepts 30 students each year to both the onsite program and the online program. To be admitted to the Veterinary

Technology program, applicants must meet all of the following requirements:

1. Admission to NOVA in the Veterinary Technology program must be at the Loudoun campus.
 2. Be 18 years of age or older, or have assistant dean approval.
 3. Satisfactory scores on NOVA placement tests for reading, writing, and mathematics.
 4. Completion of one unit of high school level algebra or equivalent.
 5. Completion of at least one unit of high school biology and one unit of high school chemistry.
 6. Past academic achievement in the above course requirements must reflect a "C" or better. Deficiencies may be corrected in the College's developmental program before entering the Veterinary Technology program.
 7. A student may elect to take general education courses listed in the program's curriculum prior to seeking acceptance to the Veterinary Technology program. These courses may be taken at any of the College's campuses and may be transferred to NOVA from other accredited post-secondary institutions. A cumulative grade point average of 2.00 or better is required in all required general education courses taken preceding admission to the Veterinary Technology program, unless waived by the division dean upon the recommendation of the assistant dean.
 8. Students seeking admission to the Veterinary Technology program must indicate if they are applying to the onsite or the online program. Applicants must arrange to have an interview with the assistant dean for the online program ONLY prior to entering the program.
 9. Students must send separate copies of their transcripts to both Student Services Center at the Loudoun Campus and the Veterinary Technology Program:

**Northern Virginia Community College
Veterinary Technology Program
1000 Harry Flood Byrd Hwy.
Sterling, VA 20164**
 10. Priority in the admissions process will be given to students currently working in the field, Virginia residents, students with a GPA of 3.0 and higher and who have completed support courses.
- Responsibilities of Veterinary Technology Students:** The following are responsibilities of students in the Veterinary Technology program:
1. Students in the Veterinary Technology program incur a variety of additional expenses. These include, but are not limited to, the cost of uniforms, rabies pre-exposure vaccinations, lab fees, accessories, and travel to clinical

assignments. Students are also responsible for 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 both day and/or evening clinical assignments.
4. Students must provide their own transportation to clinical assignments. 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 facilities outside regular education hours provided that such work does not interfere with academic responsibilities.

Veterinary Technology Program Continuation

Requirements: The following continuation requirements govern students in the Veterinary Technology program:

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 division dean upon the recommendation of the assistant dean.
2. All courses in the major must be taken in the sequence prescribed in the NOVA *Catalog*, unless otherwise approved by the assistant dean.
3. Students must pass both the theoretical and the clinical/lab portions in order to pass a course.
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 prescribed clinical affiliate policies and procedures.
5. Satisfactory physical and mental health must be maintained for continuance in the program. Applicants must be free of any physical and/or mental condition which might adversely affect their acceptance or performances in the program. The College reserves the right to require medical examinations to verify continuing compliance.

Program Re-Enrollment Requirements: Any student who has voluntarily withdrawn or who has been withdrawn due to unsatisfactory academic or clinical performance may apply for re-admission the following academic year. Acceptance will be based

upon space availability, successful fulfillment of any contingencies agreed to in writing at the time of withdrawal, and assistant dean approval. An interview and medical examination 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).

Delivery Method Options: The program may be completed full-time on campus, or by program placement in the online program.

Online Veterinary Technology Program: Courses are internet based. Students will use class notes from the internet and textbooks for the didactic portion of the class. Students will participate in online class discussions and meet regularly with faculty online and by e-mail. Formal examinations will be taken at testing centers at the student's local community college. Many methods of evaluation of clinical skills will be employed including: on-site evaluation by faculty and mentors, product evaluation (i.e. radiographs and blood slides, etc. done by student), videotaping, e-mail assignments, task list check-off, visits by college faculty, and student journals.

Special curriculum admission requirements (1-10 above) and Veterinary Technology Program Continuation requirements (1-5 above) also pertain to the online program.

The online program requires 3 years (8 semesters) for completion. Students enroll in two or three veterinary technology courses per semester for 8 semesters. Classes must be taken in sequence.

The following requirements apply to students in the online veterinary technology program in addition to the requirements listed for the on-campus program:

1. Students must work at an approved veterinary facility, an average minimum of 20 hours per week.
2. Students must have a veterinary mentor; this person must be a licensed veterinarian and will receive a certificate as an adjunct clinical professor after verification of credentials. The mentor will work with the student and NOVA faculty members to complete specific educational objectives with the student. Mentors will meet with the students on a regular basis and stay in touch with the college faculty by phone or e-mail. The mentor has the option of appointing an assistant mentor who must be another veterinarian or licensed technician to assist the student and sign off on clinical tasks as required for each course.
3. Students must attend the Loudoun Campus up to three times per semester for laboratory session and practical examinations.

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
MTH	126 Mathematics for Allied Health	2
¹ SDV	Elective	1
VET	105 Introduction to Veterinary Technology	3
VET	111 Anatomy/Physiology of Domestic Animals	4
VET	116 Animal Breeds & Behavior	3
VET	211 Animal Diseases I	2
Total		18
2nd Semester		
² CHM	Elective	4
VET	121 Clinical Practices I	3
VET	131 Clinical Pathology I	3
VET	135 Anesthesia of Domestic Animals	2
VET	212 Animal Diseases II	2
³ ___	Social Science Elective	3
Total		17
3rd Semester		
VET	290 Internship	4
Total		4
4th Semester		
⁴ ___	Humanities/Fine Arts Elective	3
VET	122 Clinical Practices II	3
VET	132 Clinical Pathology II	3
VET	216 Animal Pharmacology	2
VET	221 Advanced Clinical Practices III	4
⁵ PED	116 Lifetime Fitness & Wellness	1
Total		16
5th Semester		
⁶ CST	110 Intro to Communication	3
⁵ PED/RPK	Elective	1
VET	133 Clinical Pathology III	3
VET	217 Introduction to Laboratory, Zoo, and Wildlife Medicine	2
VET	235 Animal Hospital Management /Client Relations	3
VET	298 Seminar & Project	2
Total		14

Total credits for the A.A.S. Degree in Veterinary Technology = 69

- ¹ Students can take SDV 100 College Success Skills or the SDV 101 Orientation section related to their particular program.
- ² Choose CHM 101, CHM 121, CHM 111, or other CHM courses approved by your faculty advisor.
- ³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.
- ⁴ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.
- ⁵ The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 220, 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.
- ⁶ CST 126 may be substituted.

WEB DESIGN AND DEVELOPMENT CAREER STUDIES CERTIFICATE

See Information Technology

WEB DESIGN SPECIALIST CAREER STUDIES CERTIFICATE

See Communication Design

IT courses used for this program may not be more than 10 years old, unless approved by division dean.

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

WELDING: BASIC TECHNIQUES

Career Studies Certificate **MA**

Purpose: This curriculum is designed for persons 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 program.

One Year		Credits
1st Semester		
¹ ENG/CST	Elective	3
WEL	116 Welding I (Oxyacetylene)	2
WEL	121 Arc Welding	2
Total		7
2nd Semester		
WEL	122 Welding II (Electric Arc)	3
Total		3
3rd Semester		
WEL	130 Inert Gas Welding	3
WEL	160 Semi-Automatic Welding Processes	3
Total		6

Total credits for the Welding: Basic Techniques Career Studies Certificate = 16

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

- ¹ The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 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 professional organizations. Each program is designed with the advice of community health professionals to include a balance of technical and general education courses. The purpose of Allied Health and Nursing programs is to prepare caring, competent, adaptable, reflective, service-oriented health care professionals who can identify and use a variety of resources and technologies to function successfully in diverse and evolving health care practice environments.

Students are advised that the NOVA's Allied Health and Nursing programs have been designed to prepare students for direct entry to health careers. However, a few programs have articulated agreements with four-year colleges and universities that facilitate the partial or complete transfer of NOVA course work to four-year degree programs. Students who wish to transfer to a baccalaureate program should consult the appropriate assistant dean 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.

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. The College

contracts with a large number of Metropolitan Washington health-care facilities and community-based agencies for clinical instruction. These contracts regulate the conditions under which NOVA Allied Health and Nursing students may obtain required clinical experience. In some cases, accrediting bodies may specify program requirements.

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 at a program information session. To declare your major in an Allied Health or Nursing program an interview with a counselor or an assistant dean may also be required. Admission is not complete until all admission requirements are met. Early application is desirable.

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

The Allied Health and Nursing programs are authorized to deny enrollment in health programs to any student who has been arrested and charged with a felony pertaining to controlled substances and who was adjudicated guilty, or adjudication was withheld because of placement in a pre-trial intervention program or who entered a plea of nolo contendere.

GENERAL INFORMATION AND ADMISSIONS 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.	72
*Echocardiography Specialization	A.A.S.	68
*Vascular Sonography Specialization	A.A.S.	68
*Emergency Medical Services	A.A.S	68
Health Information Management	A.A.S	70
*Medical Lab Technology	A.A.S	71
*Nursing	A.A.S	70
*Nursing MOMENTUM 2+1/ General Studies	A.A.S. & A.S.	90
*Physical Therapist Assistant	A.A.S	71
*Radiography	A.A.S	72
*Respiratory Therapy	A.A.S	72
Clinical Data Coding	CSC	29
Computed Tomography	CSC	9
Emergency Medical Technician–Basic	CSC	11
Emergency Medical Technician–Intermediate	CSC	23
Paramedic	CSC	17
Magnetic Resonance Imaging	CSC	11
Medical Transcription	CSC	23
Phlebotomy	CSC	11

*These programs require students to successfully complete prerequisite courses prior to admission. See program description for specific details.

General Admission Requirements for Allied Health and Nursing Programs

Unless otherwise specified, applicants must meet all of the following requirements to be admitted to Allied Health or Nursing degree or career studies certificate programs:

1. Be admitted to Northern Virginia Community College.
2. Be 18 years of age or older, or have approval of the Assistant Dean.
3. Have earned satisfactory scores on specified placement tests.

4. Have completed one unit of high school-level algebra or equivalent. See “Admission Requirements” under EACH program for particular math course prerequisites.
5. Have completed at least one unit of high school-level science or equivalent. See “Admission Requirements” under EACH program for particular science course prerequisites.
6. Have achieved a “C” average or higher in the above course requirements. Deficiencies may be corrected by taking NOVA courses before entering an Allied Health or Nursing program of study.
7. Have achieved a 2.0 GPA or higher in all required general education courses taken preceding admission to an Allied Health or Nursing program, unless waived by the division dean upon the recommendation of the assistant dean.
8. Hold current CPR certification prior to entering clinical courses, unless formally waived by the assistant dean. See specific program for level of CPR required.
9. Submit a completed Pre-Admission Health History and Physical for Allied Health and Nursing form (125–007) signed by a licensed physician or nurse practitioner; this must be submitted prior to entering program courses.
10. Students with criminal convictions who do not self-disclose this information are subject to dismissal from the program and will not be allowed admission in any other Allied Health or Nursing program. A criminal background check and drug screen are required for admission to programs as clinical affiliates include this requirement in affiliation agreements.
11. Have completed a program information session and/or interview with the assistant dean as required.

Responsibilities of Allied Health and Nursing Students

The following are responsibilities of students in all Allied Health and Nursing programs:

1. 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*.
2. 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.

3. 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.
4. A strict dress code is required in the clinical setting. Students may be dismissed if they fail to comply with this dress code.
5. 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.
6. Students must provide their own transportation to clinical assignments. Strict attendance is required at clinical sites.
7. 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 health care facility. The student is responsible for any expenses incurred for this treatment.
8. Students must comply with all clinical contract protocols including immunization requirements, drug screening and background checks.
9. Students must keep their CPR certifications current each year they are enrolled in an Allied Health or Nursing Program.
10. 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 Division Dean.
11. Students are expected to conform to the *Code of Clinical Conduct* as outlined in the *Nursing and Allied Health Student Handbook*, the *Student Clinical Education Handbook*, and comply with the behaviors outlined in the *Generic Abilities, Core Values and APTA Code of Conduct* for the programs, as well as adhere to the student code of conduct outlined in the *NOVA Student Handbook* while in the clinic and while living in clinic owned housing. Students who fail to demonstrate professional and appropriate behavior required of

a health care practitioner, as outlined in the above publications, will receive a failing grade for the course, are subject to dismissal from the program, disciplinary action if the behavior violates the standards of student conduct outlined in the *NOVA Student Handbook*, or both.

Continuation Requirements for Allied Health and Nursing Students

The following continuation requirements govern students in all Allied Health and Nursing programs:

1. 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 waived by the division dean upon the recommendation of the assistant dean.
2. All courses in the major must be taken in the sequence prescribed in the *NOVA Catalog*, unless otherwise approved by the program assistant dean.
3. To pass a course students must successfully complete both the didactic (classroom) and the clinical/lab requirements.
4. 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.
5. Students must be able to perform all essential functions of the program in which they are enrolled.
6. Students with criminal convictions who do not self-disclose this information are subject to dismissal from the program and will not be allowed admission in any other Allied Health or Nursing program.

Program Re-Enrollment Requirements for Allied Health and Nursing Students

Any student who has voluntarily withdrawn or who has been withdrawn due to unsatisfactory academic, conduct, or clinical performance may apply for readmission the following academic year. Acceptance will be based upon space availability, successful fulfillment of any contingencies agreed to in writing at the time of withdrawal, and assistant dean approval. An interview and medical examination may be required. The medical examination requirement may be fulfilled by submitting a completed Pre-Admission Health History and Physical for Allied Health and Nursing form (125-007) signed by a licensed physician or nurse practitioner.

Any student who has been out of the program for any reason for longer than one academic year must reapply under the admissions requirements. A medical examination and interview with the assistant dean are required. Additional coursework may be required prior to a clinical rotation assignment.

MEDICAL EDUCATION – ALLIED HEALTH AND NURSING CURRICULA

DENTAL HYGIENE

Associate of Applied Science Degree **MEC**

Purpose: The curriculum is designed to prepare selected students to serve in a dynamic and growing health profession as valuable members of the Dental Health team. At the successful completion of the program, the student will be eligible to take the National Board and Regional Board Examinations in Dental Hygiene leading to licensure as a Registered Dental Hygienist (R.D.H.).

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 faculty advisor early in their program.

Admission Requirements:

Students must:

- 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 US.
- Pass NAS 161–162 Health Science I–II 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 Health Care 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.
- Look for the competitive admission and deadlines for applications on the Dental Hygiene Web site at www.nvcc.edu/medical/health/dental/index.htm.

Special Program Requirements: The Commonwealth of 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 assistant dean prior to admission.

Special Accreditation Status: The curriculum has been accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the Council on Post-Secondary Accreditation and by the U.S. Department of Education.

Prerequisites:		Credits
ENG	111 College Composition I	3
NAS	161 Health Science I	4
NAS	162 Health Science II	4
SDV	101 Orientation to Health Care	1
Total		12

Two Years		Credits
1st Semester		
DNH	111 Oral Anatomy	2
DNH	115 Histology/Head and Neck Anatomy	3
DNH	130 Oral Radiography for the Dental Hygienist	2
DNH	141 Dental Hygiene I	5
Total		12

2nd Semester		
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
Total		13

3rd Semester		
DNH	143 Dental Hygiene III	4
DNH	214 Practical Materials for Dental Hygiene	2
Total		6

4th Semester		
DNH	150 Nutrition	2
DNH	226 Public Health Dental Hygiene I	2
DNH	235 Management of Pain & Anxiety in the Dental Office	2
DNH	244 Dental Hygiene IV	5
¹ PED	116 Lifetime Fitness & Wellness	1
PSY	201 Introduction to Psychology I	3
Total		15

5th Semester		
CST	229 Intercultural Communication	3
DNH	227 Public Health Dental Hygiene II	1
DNH	230 Office Practice & Ethics	1
DNH	245 Dental Hygiene V	5
² ___	Humanities/Fine Arts Elective	3
¹ PED/RPK	Elective	1
Total		14

Total credits for the A.A.S. Degree in Dental Hygiene = 72 (includes 12 prerequisite credits)

¹ The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 220, 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.

² Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

DIAGNOSTIC MEDICAL SONOGRAPHY

Associate of Applied Science Degree **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 areas of the patient's body. The sonographer is a central member of the health care team and assists the radiologist in body image interpretation. Upon successful completion of the 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.
- Attend a Diagnostic Medical Sonography Information Session.
- Complete BIO 141 Anatomy and Physiology I with a "B" or higher.
- Complete DMS 100 Orientation to the Sonography Profession with a "B" or higher.
- Complete ENG 111 College Composition I with a grade of "C" or higher.
- Complete MTH 151 Mathematics for the Liberal Arts I with a "C" or higher.
- Complete PHY 195 Topics in Ultrasound Acoustical Physics with a "B" or higher.
- Complete SDV 101 Orientation to Healthcare with a "C" or higher.

Prerequisites:		Credits
BIO	141 Human Anatomy and Physiology I	4
DMS	100 Orientation to the Sonography Profession	1
ENG	111 College Composition I	3
MTH	151 Mathematics for Liberal Arts I	3
PHY	195 Topics in Ultrasound Acoustical Physics	2
SDV	101 Orientation to Healthcare	1
Total		14

Two Years		Credits
1st Semester		
BIO	142 Human Anatomy and Physiology II	4
DMS	196 On-Site Training in General Sonography	1
DMS	206 Introduction to Sonography	2
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
Total		13

2nd Semester		
DMS	209 Ultrasound Physics and Instrumentation II	2
DMS	211 Abdominal Sonography	3
DMS	212 Obstetrical and Gynecological Sonography	3
DMS	219 Ultrasound Physics and Instrumentation Lab II	1
DMS	231 Clinical Education I	3
Total		12

3rd Semester		
DMS	232 Clinical Education II	4
Total		4

4th Semester		
¹ CST	Speech Elective	3
DMS	190 Coordinated Internship	5
DMS	241 Advanced Abdominal Sonography	3
DMS	242 Advanced Obstetrical and Gynecological Sonography	3
Total		14

5th Semester		
DMS	222 Sonography Registry Review	2
DMS	243 Breast Sonography	1
DMS	290 Coordinated Internship	4
² _____	Humanities/Fine Arts Elective	3
³ PED	116 Lifetime Fitness and Wellness	2
⁴ _____	Social Science Elective	3
Total		15

Total credits for the A.A.S. Degree in Diagnostic Medical Sonography = 72 (includes 14 prerequisite credits)

¹ The speech elective may be selected from CST 229 Intercultural Communication, CST 110 Introduction to Communication, CST 115 Small Group Communication, or CST 126 Interpersonal Communication.

² Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

³ The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 220, 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.

⁴ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

DIAGNOSTIC MEDICAL SONOGRAPHY: ECHOCARDIOGRAPHY SPECIALIZATION

Associate of Applied Science Degree **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.
- Attend a Diagnostic Medical Sonography Information Session.
- Complete BIO 141 Anatomy and Physiology I with a "B" or higher.
- Complete DMS 100 Orientation to the Sonography Profession with a "B" or higher.
- Complete ENG 111 College Composition I with a grade of "C" or higher.
- Complete MTH 151 Mathematics for the Liberal Arts I with a "C" or higher.
- Complete PHY 195 Topics in Ultrasound Acoustical Physics with a "B" or higher.
- Complete SDV 101 Orientation to Healthcare with a "C" or higher.

Prerequisites:		Credits
BIO	141 Human Anatomy and Physiology I	4
DMS	100 Orientation to the Sonography Profession	1
ENG	111 College Composition I	3
MTH	151 Mathematics for Liberal Arts I	3
PHY	195 Topics in Ultrasound Acoustical Physics	2
SDV	101 Orientation to Healthcare	1
Total		14

Two Years		Credits
1st Semester		
BIO	142 Human Anatomy and Physiology II	4
DMS	196 On-Site Training in Echocardiography	1
DMS	206 Introduction to Sonography	2
DMS	208 Ultrasound Physics and Instrumentation I	2
DMS	218 Ultrasound Physics and Instrumentation Lab I	1
DMS	240 Echocardiography Sectional Anatomy	3
Total		13
2nd Semester		
DMS	150 Echocardiography I	4
DMS	209 Ultrasound Physics and Instrumentation II	2
DMS	219 Ultrasound Physics and Instrumentation Lab II	1
DMS	231 Clinical Education I	3
DMS	256 Echocardiography Case Study Review	1
¹ PED	116 Lifetime Fitness and Wellness	2
Total		13

3rd Semester		Credits
DMS	232 Clinical Education II	4
Total		4

4th Semester		Credits
² CST	Speech Elective	3
DMS	190 Coordinated Internship	5
DMS	250 Echocardiography II	4
Total		12

5th Semester		Credits
DMS	255 Echocardiography Registry Review	2
DMS	290 Coordinated Internship	4
³ ___	Humanities/Fine Arts Elective	3
⁴ ___	Social Science Elective	3
Total		12

Total credits for the A.A.S. Degree in Diagnostic Medical Sonography with a Specialization in Echocardiography = 68 (includes 14 prerequisite credits)

¹ The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 220, 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.

² The speech elective may be selected from CST 229 Intercultural Communication, CST 110 Introduction to Communication, CST 115 Small Group Communication, or CST 126 Interpersonal Communication.

³ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

⁴ The social science elective may be selected from the social/ behavioral sciences courses listed under General Education Electives.

DIAGNOSTIC MEDICAL SONOGRAPHY: VASCULAR SONOGRAPHY SPECIALIZATION

Associate of Applied Science Degree **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 Sonography (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.
- Attend a Diagnostic Medical Sonography Information Session.
- Complete BIO 141 Anatomy and Physiology I with a "B" or higher.
- Complete DMS 100 Orientation to the Sonography Profession with a "B" or higher.
- Complete ENG 111 College Composition I with a grade of "C" or higher.

- Complete MTH 151 Mathematics for the Liberal Arts I with a “C” or higher.
- Complete PHY 195 Topics in Ultrasound Acoustical Physics with a “B” or higher.
- Complete SDV 101 Orientation to Healthcare with a “C” or higher.

Prerequisites:		Credits
BIO	141 Human Anatomy and Physiology I	4
DMS	100 Orientation to the Sonography Profession	1
ENG	111 College Composition I	3
MTH	151 Mathematics for Liberal Arts I	3
PHY	195 Topics in Ultrasound Acoustical Physics	2
SDV	101 Orientation to Healthcare	1
Total		14

Two Years		Credits
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1st Semester		
BIO	142 Human Anatomy and Physiology II	4
DMS	196 On-Site Training in Vascular Sonography	1
DMS	206 Introduction to Sonography	2
DMS	208 Ultrasound Physics and Instrumentation I	2
DMS	218 Ultrasound Physics and Instrumentation Lab I	1
DMS	245 Vascular Ultrasound Sectional Anatomy	3
Total		13

2nd Semester		
DMS	160 Vascular Sonography I	4
DMS	209 Ultrasound Physics and Instrumentation II	2
DMS	219 Ultrasound Physics and Instrumentation Lab II	1
DMS	231 Clinical Education I	3
DMS	265 Vascular Case Study Review	1
¹ PED	116 Lifetime Fitness and Wellness	2
Total		13

3rd Semester		
DMS	232 Clinical Education II	4
Total		4

4th Semester		
² CST	Speech Elective	3
DMS	190 Coordinated Internship	5
DMS	260 Vascular Sonography II	4
Total		12

5th Semester		
DMS	266 Vascular Ultrasound Registry Review	2
DMS	290 Coordinated Internship	4
³ ___	Humanities/Fine Arts Elective	3
⁴ ___	Social Science Elective	3
Total		12

Total credits for the A.A.S. Degree in Diagnostic Medical Sonography with a Specialization in Vascular Sonography = 68 (includes 14 prerequisite credits)

¹ The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 220, 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.

² The speech elective may be selected from CST 229 Intercultural Communication, CST 110 Introduction to Communication, CST 115 Small Group Communication, or CST 126 Interpersonal Communication.

³ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

⁴ The social science elective may be selected from the social/ behavioral sciences courses listed under General Education Electives.

EMERGENCY MEDICAL SERVICES

Associate of Applied Science Degree **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.

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 faculty advisor early in their program.

Admission Requirements:

Students must:

- Comply with all General Admission Requirements for Allied Health Programs.
- Attend a mandatory EMT Department information session, held monthly.
- Be 16 years of age for the first semester, and 18 years of age or older for subsequent semesters.
- Hold, at a minimum, a high school or general equivalency diploma. Students may apply for Dual Enrollment for attendance during the first semester.
- Be proficient in reading, writing and speaking the English language, and attain satisfactory scores on the NOVA math and English placement assessments.
- Have attained a 2.0 GPA at last school attended. Students in Dual Enrollment must maintain 2.0 GPA during concurrent high school courses.
- Have no physical or mental impairment that would render you unable to perform all skills required for EMS training at any level.
- Possess an original Virginia (or state of domicile) State Police Criminal History, with no record of any sexual crime and be at least five years past final release of any felony or drug-related convictions. See www.virginiatrooper.org for application (form #SP-167), and request the \$20 criminal history and sex offender status report. Report must be resubmitted annually.

Completion Requirements:

- Hold a current certification in CPR – Healthcare Provider or equivalent.
- After successful completion of the first semester, the following additional requirements must be achieved and maintained throughout attendance in the second through fifth semesters:

- 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 annual Health Record with appropriate immunizations.
- 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 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 2nd year, student is eligible for NREMT-Paramedic testing. Students entering program with prior certifications must attend 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. Effective Fall 2005, all students continuing to Paramedic certification are required to complete the AAS degree requirements by their NREMT-P test date.

1. Students who receive an “I” (incomplete) grade in any of the courses in the EMS sequence must resolve the Incomplete before continuing in the EMT sequence.
2. Students must receive a grade of “C” or higher in core EMS courses in order to be eligible for the National Registry certifying examinations.
3. All clinical and internship requirements must be met prior to taking any Virginia and/or National Registry certifying examination(s).

Re-Enrollment: Students must follow the re-enrollment requirements for all Allied Health students.

Special Accreditation Status: The 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).

Two Years		Credits
1st Semester		
EMS	111 Emergency Medical Technician-Basic	6
EMS	120 EMT-Basic Clinical	1
ENG	111 College Composition I	3
NAS	150 Human Biology	4
SDV	101 Orientation to Health Care	1
Total		15
2nd Semester		
EMS	151 Introduction 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
EMS	213 ALS Skills Development	1
HLT	250 Pharmacology	3
Total		14
3rd Semester		
EMS	155 ALS – Medical Care	4
EMS	159 EMS Special Populations	2
EMS	172 ALS Clinical Internship II	2
EMS	173 ALS Field Internship II	1
¹ ___	Social Science Elective	3
Total		12
4th Semester		
EMS	201 EMS Professional Development	2
EMS	205 Advanced Pathophysiology	3
EMS	207 Advanced Patient Assessment	3
EMS	242 ALS Clinical Internship III	1
EMS	243 ALS Field Internship III	1
EMS/ FST/ HLT	Elective	2
Total		12
5th Semester		
EMS	211 Operations	2
EMS	216 Paramedic Review	1
EMS	244 ALS Clinical Internship IV	2
EMS	245 ALS Field Internship IV	1
HIM	130 Healthcare Information Systems	3
² ___	Humanities Elective	3
¹ ___	Social Science Elective	3
Total		15

Total credits for the A.A.S. Degree in Emergency Medical Services = 68

¹ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

² Humanities/fine arts elective may be selected from the humanities fine arts courses listed under General Education Electives. Students are encouraged to take PHI 227: Bio-Medical Ethics, or a Spanish course.

**EMERGENCY MEDICAL SERVICES:
EMERGENCY MEDICAL TECHNICIAN-BASIC**

Career Studies Certificate

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.

Admission Requirements:

Prior to starting the program students must:

- 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 Web site for a more detailed functional job description, to ensure you are well suited for this challenging, yet rewarding pursuit. <http://vdh.virginia.state.va/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 failing grade (D or F) be received, that course must be repeated before continuing in the EMS course sequence. Should a student receive two failing grades, they will be removed for one year, and strongly encouraged to join a volunteer EMS rescue squad or get more invested in EMS in some other way. The student may then return to the EMS program, repeat the failed courses and continue, presuming they pass them on the second attempt. Should any failed course be failed under 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 are solely the responsibility of the student and punctuality and wearing of appropriate uniforms is a must. 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	6
EMS	120 Emergency Medical Technician: Basic Clinical	1
NAS	150 Human Biology	4
Total		11

Total credits for the Emergency Medical Technician-Basic Career Studies Certificate = 11

Special Notes:

- EMS 111 and EMS 120 are mandatory co-requisites. 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 Emergency Department observation, and 12 hours ambulance ride-along.
- The EMS program offers 8 – 10 sections of EMT-Basic yearly, as a year-round course offering.
- Approximately 25% of EMT-Basic students continue immediately in EMT-Intermediate classes.
- Approximately another 25-35% continues into pre-requisite for Advanced Life Support programs or other NOVA classes after completing EMT-Basic.

**EMERGENCY MEDICAL SERVICES:
EMERGENCY MEDICAL
TECHNICIAN-INTERMEDIATE**

Career Studies Certificate

MEC

Purpose: This curriculum is designed to produce competent, entry-level Emergency Medical Technician-Intermediate (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 volunteer or career, 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.

Admission Requirements:

Prior to starting the program students must:

- 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 a:
 - current EMT-Basic certification
 - current Healthcare provider certification
 - current health physical with appropriate immunizations
 - drug screen
 - current background check
- Have completed NAS 150 Human Biology with a grade of “C” or better.

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 Web site for a more detailed functional job description, to ensure you are well suited for this challenging, yet rewarding pursuit. www.vdh.virginia.gov/OEMS/Training/TPAM/Appendix/ALS%20PART%20VII.pdf

Academic Requirements: Students must complete each course with a grade of “C” or better in each course in order to continue in the EMS sequence. Should any single failing grade (D or F) be received, that course must be repeated before continuing in the EMS course sequence. Should a student receive two failing grades, they will be removed for one year, and strongly encouraged to join a volunteer EMS rescue squad or get more invested in EMS in some other way. The student may then return to the EMS program, repeat the failed courses and continue, presuming the pass them on second attempt. Should any failed course be failed under 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 are solely the responsibility of the student and punctuality and wearing of appropriate uniforms is a must. 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 Introduction to Advanced Life Support	4
EMS	153 Basic ECG Recognition	2
EMS	157 ALS: Trauma Care	3
EMS	170 ALS Internship I	1
EMS	213 ALS Skills Development	1
HLT	250 Pharmacology	3
Total		14
2nd Semester		
EMS	155 ALS: Medical Care	4
EMS	159 ALS: Special Populations	2
EMS	172 ALS Clinical Internship II	2
EMS	173 ALS Field Internship II	1
Total		9

Total credits for the Emergency Medical Technician-Intermediate Career Studies Certificate = 23

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 co-requisites.
- 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 term as well, but due to the compressed 12- week summer session, these courses do not constitute the “core” EMS curriculum, as a general rule.
- Advanced standing credit is available, at no cost, for students who have earned their EMT-Basic certification.

EMERGENCY MEDICAL SERVICES: PARAMEDIC

Career Studies Certificate

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 rescue squad, either volunteer or career, 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.

Admission Requirements:

Prior to starting the program students must:

- 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 a:
 - current EMT-Intermediate certification
 - current Healthcare provider certification
 - current health physical with appropriate immunizations
 - drug screen
 - current background check
- Have completed NAS 150 Human Biology with a grade of "C" or better.
- Have completed HLT 250 Pharmacology with a grade of "C" or better.

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 Web site for a more detailed functional job description, to ensure you are well suited for this challenging, yet rewarding pursuit. www.vdh.virginia.gov/OEMS/Training/TPAM/Appendix/ALS%20PART%20VII.pdf

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

failing grade (D or F) be received, that course must be repeated before continuing in the EMS course sequence. Should a student receive two failing grades, they will be removed for one year, and strongly encouraged to join a volunteer EMS rescue squad or get more invested in EMS in some other way. The student may then return to the EMS program, repeat the failed courses and continue, presuming they pass them on second attempt. Should any failed course be failed under 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 are solely the responsibility of the student and punctuality and wearing of appropriate uniforms is a must. 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	201 EMS Professional Development	2
EMS	205 Advanced Pathophysiology	3
EMS	207 Advanced Patient Assessment	3
EMS	242 ALS Clinical Internship III	2
EMS	243 ALS Field Internship III	1
Total		11
2nd Semester		
EMS	211 Operations	2
EMS	216 Paramedic Review	1
EMS	244 ALS Clinical Internship IV	2
EMS	245 ALS Field Internship I	1
Total		6

Total credits for the Paramedic Career Studies Certificate = 17

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 co-requisites 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 are also offered during the Summer term, but due to the compressed 12-week summer session, these courses do not constitute the "core" EMS curriculum, as a general rule.
- Advanced standing credit is available, at no cost, for students who have earned their EMT-Basic and Intermediate certifications.

HEALTH INFORMATION MANAGEMENT

Associate of Applied Science Degree

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 health care 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 faculty advisor early in their program.

Admission Requirements:

Students must:

- Comply with all General Admission Requirements for Allied Health Programs.
- Provide a high-school diploma with one unit each of high school level Algebra and Science (preferably Biology).
- Earn a score of 81 or higher on the reading section of the English placement test, a score of 85 or higher on the writing section of the English placement test.
- Earn a satisfactory score on the Mathematics for Allied Health placement test.
- 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), in association with the American Health Information Management Association (AHIMA).

Two Years Credits

1st Semester

ENG	111 College Composition I	3
HIM	111 Medical Terminology	3
HIM	130 Healthcare Information Systems	3
HIM	141 Fundamentals of Health Information Systems I	3
NAS	150 Human Biology	4
¹ PED/RPK	Elective	1
SDV	101 Orientation to Health Care	1
Total		18

2nd Semester

CST	229 Intercultural Communication	3
HIM	110 Introduction to Human Pathology	3
HIM	142 Fundamentals of Health Information Systems II	3
² _____	Humanities/Fine Arts Elective	3
ITE	150 Desktop Database Software	3
³ _____	Social Science Elective	3
Total		18

3rd Semester

HIM	220 Health Statistics	3
HIM	226 Legal Aspects of Health Record Documentation	2
HIM	230 Information Systems & Technology in Health Care	3
HIM	250 Health Data Classification Systems I (ICD-9-CM)	4
HIM	251 Clinical Practice I	3
HIM	255 Health Data Classification Systems II (CPT)	2
¹ PED	116 Lifetime Fitness and Wellness	1
Total		18

4th Semester

HIM	229 Performance Improvement in Health Care	2
HIM	233 Electronic Health Record Applications	3
HIM	249 Supervision and Management Practices for HIM	3
HIM	252 Clinical Practice II	3
HIM	254 Advanced Coding and Reimbursement	3
HIM	260 Pharmacology for HIM	3
Total		17

Total credits for the A.A.S. Degree in Health Information Management = 71

¹ The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 220, 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.

² Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

³ The social science elective may be selected from the social/ behavioral sciences courses listed under General Education Electives.

HEALTH INFORMATION MANAGEMENT: CLINICAL DATA CODING

Career Studies Certificate

MEC

Purpose: The curriculum is designed for persons who seek entry-level employment as clinical data coding specialists in health care 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 health care 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:

Students must:

- Comply with all General Admission Requirements for Allied Health Programs.
- Provide a high school diploma with one unit each of high school level Science (preferably Biology or Chemistry).
- Earn a score of 81 or higher on the reading section of the English placement test, a score of 85 or higher on the writing section of the English placement test.
- 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

1st Semester

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 (ICD-9-CM)	4
NAS	150 Human Biology	4
Total		17

2nd Semester

HIM	110 Introduction 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
Total		12

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.

Students must complete NAS 150 with a "C" or higher.

HEALTH INFORMATION MANAGEMENT: MEDICAL TRANSCRIPTION

Career Studies Certificate **MEC**

Purpose: This program prepares students to transcribe medical reports typically encountered in a health care organization through the machine transcription process. Students will practice the transcription of medical dictation incorporating English usage and transcription skills, medical knowledge; proofreading and editing skills are needed to meet progressively demanding accuracy and productivity standards. A medical transcriptionist interprets oral dictation by physicians and other health care professionals and records the content in a written form (either print or electronic), while editing simultaneously to produce a grammatically correct document. The dictation is commonly related to patient assessment, workup, diagnostic and therapeutic procedures, treatment and clinical course, prognosis, and patient instructions. The resulting documentation is the record of patient care that is necessary to facilitate delivery of healthcare services.

Admission Requirements:

Students must:

- Comply with all General Admission Requirements for Allied Health Programs.
- Provide a high school diploma with one unit each of high school level Science (preferably Biology).
- Earn a satisfactory score on the NOVA placement/assessment test to qualify students for English 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.

One Year	Credits
1st Semester	
ENG 111 College Composition I	3
HIM 111 Medical Terminology I	3
HIM 121 Medical Transcription I	4
¹ NAS 150 Human Biology	4
Total	14
2nd Semester	
HIM 122 Medical Transcription II	4
HIM 196 On-Site Training	3
HIM 260 Pharmacology for Health Information Management	3
Total	10

Total credits for the Medical Transcription 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.

¹ Students must complete NAS 150 with a "C" or higher.

MESSAGE THERAPY CAREER STUDIES CERTIFICATE

See Programs of Study under "M"

MEDICAL LABORATORY TECHNOLOGY

Associate of Applied Science Degree **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 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 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 health care 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.

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 faculty 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:

Students must:

- Comply with all General Admission Requirements for Allied Health and Nursing Programs.
- Attend a Medical Laboratory Technology Information Session.
- Be eligible for MTH 163 as shown by satisfactory scores on the NOVA placement tests.
- Completed with a grade of "C" or higher: BIO 101 or BIO elective (exclusive of BIO 205); CHM 101 or CHM 111, ENG 111, SDV 101.
- Document a GPA of at least 2.0 at last school attended.
- Have proficiency in computer skills and possess ready access to the internet for select online assignments.

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/.

Prerequisites:		Credits
BIO	101 General Biology I or BIO Elective (exclusive of BIO 205)	4
CHM	101 General Chemistry I or CHM 111 College Chemistry I	4
ENG	111 College Composition I	3
SDV	101 Orientation to Health Care	1
Total		12

Two Years **Credits**

1st Semester		
BIO	205 General Microbiology	4
¹ CST	229 Intercultural Communication	3
MDL	101 Introduction to Medical Laboratory Techniques	3
HLT	141 Introduction to Medical Terminology	1
MDL	196 On-Site Training	1
Total		12

2nd Semester		
MDL	120 Principles of Hematology	4
MDL	215 Immunology	2
MDL	261 Clinical/Chemistry/Instrumentation I	4
² PED	116 Lifetime Fitness & Wellness	1
² PED/RPK	Elective	1
Total		12

3rd Semester		
MDL	266 Clinical Chemistry Techniques	4
MDL	276 Clinical Hematology Techniques	4
Total		8

4th Semester		
MDL	216 Blood Banking	4
MDL	251 Clinical Microbiology I	3
MDL	252 Clinical Microbiology II	2
³ ___	Social Science Elective	3
Total		12

5th Semester		
⁴ ___	Humanities/Fine Arts Elective	3
MDL	265 Advanced Clinical Chemistry	2
MDL	277 Clinical Immunohematology & Immunology Technique	4
MDL	278 Clinical Microbiology Techniques II	4
MDL	281 Clinical Correlations	1
Total		14

Total credits for the A.A.S. Degree in Medical Laboratory Technology = 70 (includes 12 prerequisite credits)

¹ CST 110 Intro to Communication or CST 126 Interpersonal Communication may be substituted for CST 229.

² The PED requirement may be met by one of the following options: PED 116, 2 cr.; or 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.

³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

⁴ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

PHLEBOTOMY

Career Studies Certificate

MEC

Purpose: The career studies certificate in Phlebotomy 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:

Students must:

- 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.

Advanced Standing: Persons who have been certified by a national agency as a phlebotomist or who have documented extensive experience in phlebotomy may seek advanced standing for MDL 196 (On-Site Training).

One Semester		Credits
ENG	111 College Composition I or CST 110 Intro to Communication	3
HLT	141 Introduction to Medical Terminology	1
MDL	105 Phlebotomy	3
MDL	106 Clinical Phlebotomy	4
Total		11

Total credits for the Phlebotomy Career Studies Certificate = 11

NURSING

Associate of Applied Science Degree

MEC

Purpose: The Nursing program is designed to prepare students to participate as contributing members of the health team, rendering direct care to patients in a variety of health care facilities and agencies. Upon satisfactory completion of the program, students will be eligible to take the National Council Licensure Examination (NCLEX) 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.

Students may follow one of three tracks to complete the Nursing program:

1. The Traditional, four-semester track with no required classes in the summer;
2. The Accelerated Online/Hybrid track, which includes four consecutive semesters and presents the didactic portion of courses online; or
3. Momentum 2 + 1, a six consecutive semester track at NOVA. This prepares students to transfer to a university and complete two additional full-time semesters to earn a Bachelor of Science in Nursing.

Complete information regarding each of these program tracks can be found at www.nvcc.edu/medical/health/nursing. Admission to the Nursing program is competitive.

The application process is addressed in the online information session/orientation.

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 faculty advisor early in their program.

Admission Requirements for the Traditional and Accelerated Online/Hybrid tracks:**Students must:**

- Comply with all General Admission Requirements for Allied Health and Nursing Programs listed on the second page of the Medical Education Programs section.
- Complete an online Nursing Information Session.
- Meet the specific requirements for admission to Nursing. The Nursing program admission process is competitive. To be considered for admission, applicants must
 - Hold a high school diploma or 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 151 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 NAS 161 and 162 with a "C" or higher. NAS 161 and 162 or any transferred courses used to satisfy this requirement must have been completed within 10 years of the semester in which verification of the Nursing admission checklist is completed.
- 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.
- **Achieve a satisfactory score on the computer competency test or have passed HIM 130, AST 232, AST 236, BUS 226, CSC 110 or ITE 115.**
- Have minimum 2.5 cumulative GPA.
- Successfully complete the Nursing Pre-Admission Test. Students may take the test three times only.
- Successfully complete American Heart Association Healthcare provider CPR prior to registering for a nursing course.
- Submit a completed Health Examination/Physical Form with all required immunizations prior to beginning nursing classes.
- Space for out-of-area, out-of-state or international applicants may not be available. For more information about residency requirements, see Student Services and/or the current NOVA catalog (www.nvcc.edu) for the priority admission policy.

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, 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 "C" grade (78 or higher) **in all nursing courses** to continue in the program. This includes both lecture and clinical components. First year students must complete HLT 141 no later than the first semester and HLT 250 must be taken no later than the second semester, as co-requisites to NUR 111, 180 and 201 respectively.

Special Accreditation Status: The Nursing program is approved by the Virginia State Board of Nursing Perimeter Center, 9960 Maryland Drive, Suite 300, Richmond, Virginia 23233 and accredited by the National League for Nursing Accrediting Commission, 3343 Peachtree Road, NE, Suite 500, Atlanta, Georgia, 30326. Telephone 404-975-5020.

Licensure Requirements: The Virginia State Board of Nursing reserves the right to deny licensure to any candidate who has been found guilty of a misdemeanor or felony. These candidates must consult with the Assistant Dean of Nursing **prior to** admission into the Nursing program.

LPN to RN Transition: Advanced placement to the Traditional Track is available for Licensed Practical Nurses (LPNs) wishing to enter the Nursing program through the LPN to RN Transition program. This advanced placement is designed to acknowledge the previously acquired skills of the LPN. LPNs must apply to the College and complete an LPN-RN Information Session online for detailed information.

LPN to RN applicants must successfully complete NUR 115 LPN Transition (3 credits) and NUR 116 Selected Nursing Concepts (1 credit). These courses are designed to bridge the gap between LPN training and the first semester of the Nursing program and begin the development of professional nursing skills. A grade of “C” or higher is required in these courses. LPNs licensed in Virginia who are admitted to NOVA’s nursing program and who successfully complete NUR 115 LPN Transition and NUR 116 Selected Nursing Concepts will be granted credit for NUR 111 Nursing I (8 cr.). LPNs are admitted to the Traditional Track only.

Re-Admission: Students who leave the Nursing program and wish to be re-admitted must meet current 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 the NOVA Nursing program will be required to take the 2-credit version of NUR 116 Selected Nursing Concepts. Readmission is competitive and based on space availability.

Transfer from Other Institutions: Nursing credits earned at other institutions are reviewed by the assistant dean 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 will be required to satisfactorily complete the 2-credit version of NUR 116. Admission is competitive and based on space availability.

NURSING PROGRAM (Traditional)

Classes may be taken on campus or via a combination of synchronous (live) and asynchronous (anytime) online activities and in-person laboratory and clinical practice. Nursing courses must be taken in the order outlined below.

Prerequisites:		Credits
ENG	111 College Composition I	3
NAS	161 Health Science I	4
NAS	162 Health Science II	4
SDV	101 Orientation to Health Care	1
Total		12

Two Years

1st Semester		Credits
HLT	141 Introduction to Medical Terminology	1
NUR	111 Nursing I	8
NUR	150 Community-Based Nursing in a Multicultural Environment	3
PSY	201 Introduction to Psychology I	3
Total		15

2nd Semester		Credits
HLT	250 General Pharmacology	3
NUR	180 Essentials of Maternal/Newborn Nursing	4
NUR	201 Psychiatric Nursing	4
PSY	202 Introduction to Psychology II	3
Total		14

3rd Semester		Credits
CST	229 Intercultural Communication or CST 110, or CST 115 or CST 126	3
¹ ___	Humanities/Fine Arts Elective	3
NUR	221 Second Level Nursing Principles & Concepts I	9
Total		15

4th Semester		Credits
NUR	222 Second Level Nursing Principles & Concepts II	9
NUR	254 Nursing Dimensions	1
NUR	255 Nursing Organization & Management	3
Total		13

Total credits for the A.A.S. Degree in Nursing = 69 (includes 12 prerequisites credits)

¹ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives. Elective should be selected with the advice of a counselor or faculty advisor to meet graduation requirements.

NURSING MOMENTUM 2+1

Associate of Applied Science Degree **NURSING** and
Associate of Science Degree in
GENERAL STUDIES **MEC**

Purpose: **MOMENTUM 2 + 1** is a 3-year, full-time track designed to prepare NOVA graduates to transfer to the Bachelor of Science Degree in Nursing at George Mason University. The first two calendar years, each of which may include summer, fall, and spring terms for a total of 6 semesters, are taken at NOVA. The third calendar year, which includes fall and spring semesters, is completed at the designated university. The **MOMENTUM 2 + 1** program has been designed so that the NOVA graduate will have earned both the General Studies AS degree and the Nursing AAS degree. The graduate will then take the NCLEX leading to state licensure as a Registered Nurse (RN). Graduates who have successfully completed the NCLEX-RN and who have earned a specified minimum cumulative GPA, they may be admitted to the designated university's Nursing program to complete two semesters of full-time study in nursing. In order to earn a Bachelor of Science Degree in Nursing, these classes must be taken as prescribed below to maintain **MOMENTUM 2 + 1** program status. A minimum 2.75 GPA is required for admission to the **MOMENTUM 2 + 1** track, in addition to all other admission requirements for NOVA's Nursing program. A 78% or higher must be maintained in nursing courses and most universities will not accept a "D" in general education courses for transfer.

Two Years		Credits
1st Semester (Summer)		
ENG	111 College Composition I	3
HLT	141 Medical Terminology	1
ITE	115 Introduction to Computer Applications and Concepts	3
NAS	161 Health Science I	4
NAS	162 Health Science II	4
SDV	101 Orientation to Health Care	1
Total		16
2nd Semester (Fall)		
NUR	111 First Level Nursing I	8
PED	116 Lifetime Fitness & Wellness	2
PSY	201 Introduction to Psychology I	3
PSY	202 Introduction to Psychology II	3
Total		16
3rd Semester (Spring)		
HLT	250 Pharmacology	3
NUR	150 Community-Based Nursing in a Multicultural Environment	3
NUR	180 Essentials of Maternal/Newborn Nursing	4
NUR	201 Psychiatric Nursing	4
Total		14
4th Semester (Summer)		
ENG	112 College Composition II	3
NUR	221 Second Level Nursing Principles and Concepts	9
NUR	255 Nursing Management	3
Total		15

5th Semester (Fall)		
¹ HIS	Elective	3
² ___	Humanities/Fine Arts	3
NUR	222 Second Level Nursing Principles and Concepts II	9
NUR	254 Nursing Dimensions	1
Total		16

6th Semester (Spring)		
CST	229 Intercultural Communications	3
² ___	Humanities/Fine Arts	3
MTH	157 Elementary Statistics	4
PHI	227 Biomedical Ethics	3
Total		13

Total credits for the A.S. Degree in General Studies and the A.A.S. Degree in Nursing = 90

¹ The history elective may be selected from the courses listed under Social/Behavioral Sciences listed under General Education Electives.

² Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives. Elective should be selected with the advice of a counselor or faculty advisor to meet graduation requirements of NOVA.

PHYSICAL THERAPIST ASSISTANT

Associate of Applied Science Degree **MEC**

Purpose: The PTA 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 health care 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 health-care 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 faculty advisor early in their program.

Admission Requirements:

Students must:

- 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 the Web site www.nvcc.edu/medical/health/pta.

- Have completed NAS 150 Human Biology with a grade of “C” or higher. BIO 141–142 or NAS 161–162 may be substituted for NAS 150.
- Have completed HLT 141 Medical Terminology with a grade of “C” or higher.
- Have a minimum 2.5 curricular GPA.
- Be 18 years of age.
- Have satisfactory scores on NOVA placement test to qualify for MTH 151 and ENG 111.

Special Accreditation Status: The program is fully accredited by the Commission on Accreditation in Physical Therapy Education.

Completion Requirements: Completion of the above steps constitutes a completed PTA Program Application. Completed PTA Program Applications will be accepted in the PTA program office beginning October first until the program is full for the following Fall semester. Acceptance is determined on a first-come-first-served basis with first priority given to legal residents domiciled in the cities and counties supporting the College. 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, students must complete a basic first aid course prior to admission into the Physical Therapist Assistant Program.

Advanced Placement Admission: Students seeking advanced placement or transfer should contact the PTA program for individual counseling.

Laboratory Examination Requirements: Each student must achieve a minimum passing score of 72% 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 72% or greater on the second attempt will fail the class and be administratively withdrawn from the program.

Re-Enrollment:

1. Students in good standing may be permitted to re-enroll in the PTA curriculum on a space available basis, with permission of the Assistant Dean.

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 re-entering 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.

Prerequisites:		Credits
NAS	150 Human Biology or NAS 161-162 Health Science I-II (8) or BIO 141–142 Human Anatomy & Physiology I-II (8)	4
HLT	141 Introduction to Medical Terminology	1
Total Credits		5

Two Years		Credits
1st Semester		
ENG	111 College Composition I	3
PTH	105 Introduction to Physical Therapy	3
PTH	121 Therapeutic Procedures I	5
PTH	151 Musculoskeletal Structure and Function	5
SDV	101 Orientation to Health Care	1
Total		17

2nd Semester		
¹ _____	Humanities/Fine Arts Elective	3
PED	220 Adult Health and Development	2
PSY	201 Introduction to Psychology I	3
PTH	115 Kinesiology for the Physical Therapist Assistant	5
PTH	122 Therapeutic Procedures II	5
Total		18

3rd Semester		
² MTH	Elective	3
PTH	131 Clinical Education I	3
Total		6

4th Semester		
PTH	225 Rehabilitation Procedures	5
PTH	231 Clinical Education II	5
³ _____	Social Science Elective	3
Total		13

5th Semester		
PTH	210 Psychiatric Aspects of Therapy	2
PTH	227 Pathological Conditions	2
PTH	232 Clinical Education III	5
PTH	245 Professional Issues	3
Total		12

Total credits for the A.A.S. Degree in Physical Therapist Assistant = 71 (includes 5 prerequisite credits)

¹ Humanities/fine arts elective may be selected from the humanities/ fine arts courses listed under General Education Electives.

² Math elective may be selected from any MTH course 151 or above.

³ The social science elective may be selected from the social/ behavioral sciences courses listed under General Education Electives.

RADIATION ONCOLOGY

Certificate **offered through**
Virginia Western Community College **MEC**

Through a collaborative arrangement with Virginia Western Community College (VWCC), NOVA students have access to the VWCC Radiation Oncology certificate program. NOVA offers more than half of the required courses, but students will take several 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/programs_of_study/programs_detail.php?program_id=110
 or telephone VWCC at 540-857-8922 or
 VWCC Student Services at 540-857-7237.

RADIOGRAPHY

Associate of Applied Science Degree **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 health care 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 faculty advisor early in their program.

Admission Requirements:**Students must:**

- Comply with all General Admission Requirements for Allied Health Programs.
- Review on-line information session at www.nvcc.edu/campuses-and-centers/medical/academic-divisions/info-session/radiography-diagnostic-imaging.html.
- Review competitive admission and deadline for applications on the radiography Web site at www.nvcc.edu/campuses-and-centers/medical/academic-divisions/allied-health/diagnostic-imaging-radiography.html.
- Qualify for MTH 151.
- 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 100 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 assistant dean.

All incomplete grades (I) must be resolved prior to taking the next course in the sequence.

Prerequisites:		Credits
*BIO	141 Anatomy & Physiology I	4
*BIO	142 Anatomy & Physiology II	4
ENG	111 College Composition I	3
RAD	100 Intro to Radiology & Protection	2
SDV	101 Orientation to Healthcare	1
Total		14

Two Years		Credits
1st Semester		
¹ PED	116 Lifetime Fitness & Wellness	1
¹ PED/RPK	Elective	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
Total		15

2nd Semester		
RAD	131 Elem. Clinical Procedures I	3
RAD	142 Principles of Radiation Quality I	4
RAD	221 Radiographic Procedures II	4
² ___	Social Science Elective	3
Total		14

3rd Semester		
³ RAD	135 Elem. Clinical Procedures II	5
Total		5

4th Semester		
RAD	205 Radiation Protection & Radiobiology	3
RAD	231 Advanced Clinical Procedures I	5
RAD	255 Radiographic Equipment	3
Total		11

5th Semester		
⁴ ___	Humanities/Fine Arts Elective	3
MDL	195 Infusion Therapy	1
RAD	232 Advanced Clinical Procedures II	5
RAD	240 Radiographic Pathology	3
RAD	246 Special Procedures	1
Total		13

Total credits for the A.A.S. Degree in Radiography = 72 (includes 14 prerequisite credits)

* NAS 161-162 may be substituted but is not recommended for students who might wish to transfer to a baccalaureate program.

¹ The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 220, 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. PED 116, 2 cr., is strongly recommended.

² The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

³ RAD 135 meets for 40 hours a week for ten weeks.

⁴ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

RADIOGRAPHY: COMPUTED TOMOGRAPHY

Career Studies Certificate **MEC**

Purpose: This career studies certificate in Computed Tomography (CT) is designed as an enhanced-competency module to provide expertise in computed tomography to registered technologists. This curriculum will prepare registered technologists for employment as computer tomographers in hospitals and imaging centers. Courses will fulfill professional continuing education (CEU) requirements, including the American Society of Radiologic Technologists' ECE program.

Program Requirements: All students must hold a current CPR-C certification. Students must maintain a "C" average in all courses. A career certificate will not be awarded until a grade of "C" or better is obtained in all didactic and clinical components.

Eligibility: All students must be graduates of an approved radiologic technology program and be registered or registry eligible according to the standards provided by the American Registry of Radiologic Technologists. *Radiographers must be registered in Radiography for one year prior to being eligible to sit for the Computed Tomography Registry.*

Clinical Requirements: Students will be required to locate an imaging center/hospital to complete the clinical component of this course. An NOVA Preceptor Agreement must be presented to the clinical staff. The contract must be signed and filed in the radiography offices prior to beginning clinical rotations. Days and hours of clinical assignments will be agreed upon by the preceptor and the students. Students must complete the specified clinical hours by the end of the semester.

One Semester		Credits
¹ ENG/CST	Elective	3
RAD	242 CT Procedures and Instrumentation	2
RAD	243 Clinical Internship in Computed Tomography	1
RAD	247 Cross-Sectional Anatomy	3
Total		9

Total credits for the Computed Tomography Career Studies Certificate = 9

Students graduating from the CT and MRI certificate programs must meet the additional requirements specified by the American Registry of Radiologic Technologists to be eligible for the certification examination. Please see specific examination requirements posted on the ARRT Web site: www.arrt.org.

¹ The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.

**RADIOGRAPHY:
MAGNETIC RESONANCE IMAGING**

Career Studies Certificate **MEC**

Purpose: This career studies certificate is designed as an enhanced-competency module to provide expertise in Magnetic Resonance Imaging (MRI) to registered technologists. This curriculum will prepare registered technologists for employment as MRI technologist in hospitals and imaging centers. Courses will fulfill professional continuing education (CEU) requirements, including the American Society of Radiologic Technologists' ECE program.

Program Requirements: All students must hold a current CPR-C certification. Students must maintain a "C" average in all courses. A career certificate will not be awarded until a grade of "C" or better is obtained in all didactic and clinical components.

Eligibility: All students must be graduates of an approved radiologic technology program and be registered or registry eligible according to the standards provided by the American Registry of Radiologic Technologists. *Radiographers must be registered in Radiography for one year prior to being eligible to sit for the Magnetic Resonance Imaging Registry.*

Clinical Requirements: Students will be required to locate an imaging center/hospital to complete the clinical component of this course. An NOVA Preceptor Agreement must be presented to the clinical staff. The contract must be signed and filed in the radiography offices prior to beginning clinical rotations. Days and hours of clinical assignments will be agreed upon by the preceptor and the students. Students must complete the specified clinical hours by the end of the semester.

One Year		Credits
Fall Semester		
RAD	247 Cross-Sectional Anatomy	3
Total		3
Spring Semester		
¹ ENG/CST	Elective	3
RAD	115 Principles of Magnetic Resonance	3
RAD	136 Clinical Procedures in MRI	2
Total		8

Total credits for the Magnetic Resonance Imaging Career Studies Certificate = 11

Students graduating from the CT and MRI certificate programs must meet the additional requirements specified by the American Registry of Radiologic Technologists to be eligible for the certification examination. Please see specific examination requirements posted on the ARRT Web site: www.arrt.org.

¹ The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by your advisor, or by CST 100, 110, 115, 126, 227 or 229.

RESPIRATORY THERAPY

Associate of Applied Science Degree **MEC**

Purpose: The curriculum is designed to prepare students as effective members of the health care 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 faculty advisor early in their program.

Transfer Placement: RTH Credits earned at other institutions are reviewed by the Assistant Dean 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 RTH courses are required to demonstrate proficiency in all transferred skills courses prior to acceptance into the program. "Practical exams" are administered and scheduled by the program faculty. A written exam is also required.

Advanced Placement Admission: Students seeking advanced placement, or transfer, including military respiratory technicians, or non-associate degree therapists should contact the assistant dean of the RTH program for individual counseling.

Admission Requirements:

Students must:

- Comply with all General Admission Requirements for Allied Health Programs.
- Attend a Respiratory Therapy Information Session on-line.
- Qualify for ENG 111 and MTH 151 through acceptable scores on NOVA placement tests.
- Have a minimum 2.0 curricular GPA.
- Have completed ENG 111, NAS 161, (BIO 141) and NAS 162 (BIO 142), HLT 141, and SDV 101 Orientation to Health Care or SDV elective with a grade of "C" or higher.
- Have completed RTH 120 with a grade of "B" or higher.

Special Accreditation Status: The NOVA Respiratory Therapy Program at the Medical Education Campus is accredited by the Commission on Accreditation for Respiratory Care (CoARC) www.coarc.com.

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.

Re-Enrollment:

1. Students in good standing may be permitted to re-enroll in the RTH curriculum on a space available basis, with permission of the Assistant Dean.
2. 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 re-entering 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 care.

Licensure Requirements: The Virginia State 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 Assistant Dean of Respiratory Therapy prior to acceptance into the program.

Prerequisites:		Credits
ENG	111 College Composition I	3
HLT	141 Medical Terminology	1
NAS	161 Health Science I or BIO 141	4
NAS	162 Health Science II or BIO 142	4
RTH	120 Fundamental Theory for Respiratory Care	2
SDV	101 Orientation to Health Care	1
Total Credits		15

Two Years		Credits
1st Semester		
HLT	250 General Pharmacology	3
¹ _____	Humanities/Fine Arts Elective	3
RTH	111 Anatomy & Physiology of the Cardiopulmonary System	3
RTH	195 Topics in Integrated Sciences for Respiratory Therapy	2
RTH	151 Fundamental Clinical Procedures	3
Total		14

2nd Semester		
² CST	229 Intercultural Communication or CST 110 or CST 115 or CST 126	3
RTH	121 Cardiopulmonary Science I	3
RTH	131 Respiratory Care Theory & Procedures I	4
RTH	145 Pharmacology for Respiratory Care I	1
RTH	196 On-Site Training in Respiratory Care I	3
Total		14

3rd Semester		
RTH	135 Diagnostic & Therapeutic Procedures	2
RTH	296 On-Site Training in Respiratory Care II	2
Total		4

4th Semester		
RTH	217 Pulmonary Rehabilitation, Home Care and Health Promo	2
RTH	222 Cardiopulmonary Science II	3
RTH	236 Critical Care Monitoring	3
RTH	253 Advanced Clinical Procedures III	3
RTH	295 Topics in Advanced Cardiac Life Support	2
Total		13

5th Semester		
PED	116 Lifetime Fitness & Wellness	1
RTH	225 Neonatal & Pediatric Respiratory Procedures	3
RTH	227 Integrated Respiratory Therapy Skills II	2
RTH	254 Advanced Clinical Procedures IV	3
³ _____	Social Science Elective	3
Total		12

Total credits for the A.A.S. Degree in Respiratory Therapy = 72 (includes 11 prerequisite credits)

¹ Humanities/fine arts elective may be selected from the humanities/fine arts courses listed under General Education Electives.

² CST 229 Intercultural Communication is recommended.

³ The social science elective may be selected from the social/behavioral sciences courses listed under General Education Electives.

COURSE DESCRIPTIONS

Course Numbers

Courses numbered 1–9 are developmental courses (see “Developmental Studies Program”). 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 are 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 Co-requisites

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 co-requisites 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. The NOVA *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 “Instructional Programs” chapter of this catalog. The NOVA *Schedule of Classes* lists the courses being offered for the respective semester.

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 COORDINATED INTERNSHIP (1–5 CR.)

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 hrs.

93–193–293 STUDIES IN (1–5 CR.)

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 hrs.

95–195–295 TOPICS IN (1–5 CR.)

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 hrs.

96–196–296 ON-SITE TRAINING IN (1–5 CR.)

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 hrs.

97–197–297 COOPERATIVE EDUCATION (1–5 CR.)

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 on page 64. Credit/work ratio not to exceed 1:5 hrs. May be repeated for credit. Variable hrs.

98–198–298 SEMINAR AND PROJECT (1–5 CR.)

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 hrs.

99–199–299 SUPERVISED STUDY (1–5 CR.)

Assignment of problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hrs.

ACCOUNTING

ACC 211 (3 CR.)

PRINCIPLES OF ACCOUNTING I*

Presents accounting principles and their application to various businesses. Covers the accounting cycle, income determination, and financial reporting. Studies services, merchandising, and includes internal controls. Lecture 3 hours per week.

ACC 212 (3 CR.)

PRINCIPLES OF ACCOUNTING II*

Prerequisite is ACC 211. Continues accounting principles with emphasis on the application to partnerships, corporations and the study of financial analysis. Includes an introduction to cost and managerial accounting. Lecture 3 hours per week.

ACC 215 (3 CR.)

COMPUTERIZED ACCOUNTING

Prerequisite is 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 is 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 is 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. Lecture 3 hours per week.

ACC 222 (3 CR.)

INTERMEDIATE ACCOUNTING II*

Prerequisite is ACC 221. Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital

structure, long-term liabilities, and investments. Lecture 3 hours per week.

ACC 230 (3 CR.)

ADVANCED ACCOUNTING

Pre- or co-requisite is 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 is 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. Lecture 3 hours per week.

ACC 232* (3 CR.)

COST ACCOUNTING II

Prerequisite is ACC 231 or equivalent. Studies profit analysis and other topics. Lecture 3 hours per week.

ACC 240 (3 CR.)

FRAUD EXAMINATION

Covers the principles and methodology of fraud 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 co-requisite is 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 in the "Description of Courses" section.

*These courses must be taken in sequence.

ACQUISITIONSSee **CONTRACT MANAGEMENT****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 and organizations 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 is 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 120 (3 CR.)**INTRODUCTION TO COURTS**

Presents an overview of the American judiciary – the federal and 50 state judicial systems – with emphasis on criminal court structures, functions, and personnel; surveys the judicial system in the Commonwealth of Virginia. Lecture 3 hours per week.

ADJ 127 (3 CR.)**FIREARMS AND MARKSMANSHIP**

Prerequisite is 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 134 (3 CR.)**COLLECTION AND PRESERVATION OF PHYSICAL EVIDENCE**

Surveys fundamental evidence collection procedures, including recognition, selection, handling, packaging and marking. Examines ways to prevent alteration, contamination, damage and tampering. Emphasizes legal requirements for a continuous chain of possession. 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, 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 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 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 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 disposition in the various American court systems with focus on the Virginia jurisdiction. Lecture 3 hours per week.

ADJ 215 (3 CR.)

REPORT WRITING

Prerequisite is ENG 111. Introduces the basic mechanics and procedures of report writing; emphasizes clear, concise, and accurate writing of communications as they relate to law enforcement records, investigations, and research. 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 226 (3 CR.)**QUESTIONED DOCUMENTS EXAMINATION**

Introduces the concept of handwriting and handprinting identification. Teaches the standard techniques for handling, dating and comparing writing and print materials. Presents an overview of the forms of paper manufacture and duplicating processes. Considers techniques of analyzing inks, paper fibers and print procedures. Examines document photography. 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 229 (3 CR.)**LAW ENFORCEMENT AND THE COMMUNITY**

Considers current efforts by law enforcement personnel to achieve an effective working relationship with the community. Surveys and analyzes various interactive approaches of law enforcement agencies and the citizenry they serve. 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 233 (3 CR.)**DIGITAL CRIME AND DIGITAL TERRORISM**

Prerequisite: Permission of the instructor. Provides instruction in the techniques and practices used to identify incidents of digital crime and digital terrorism, methods of detection of incidents, methods of protection from digital crime and digital terrorism, and the future of digital crime and digital terrorism. Lecture 3 hours per week.

ADJ 234 (3 CR.)**TERRORISM AND COUNTER-TERRORISM**

Prerequisites are 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 235 (3 CR.)**RESEARCH IN CRIMINAL JUSTICE**

Presents research methodology – including the development of research questions, quantification techniques, collection procedures, analysis tools, and the means of establishing relationships between theory, policy, and practice. 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 is 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 241 (3 CR.)**CORRECTIONAL LAW**

Studies the legal rights and obligations of the convict-probationer, inmate, and parolee. Surveys methods of enforcing both rights and obligations and the responsibilities of corrections agencies and personnel under correctional law (constitutional, statutory, and regulatory provisions). Lecture 3 hours per week.

ADJ 243 (3 CR.)**HOMELAND SECURITY AND LAW**

Prerequisite is 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 USA Patriot Act; future challenges and roles of intelligence agencies; foreign policy aspects and views. Lecture 3 hours per week.

ADJ 245 (3 CR.)**MANAGEMENT OF CORRECTIONAL FACILITIES**

Describes management options and operational implications for staffing, security, safety, and treatment. Considers impact of changes in public policy on corrections. 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 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 256 (3 CR.)
INFORMATION SECURITY
 Studies the means of protecting both government classified and private business information. Surveys techniques of storing, transmitting, destroying, and controlling access to sensitive information. 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 268 (3 CR.)
TECHNOLOGY AND THE CRIMINAL JUSTICE SYSTEM
 Presents, describes, and discusses the present state of technology in the criminal justice system. Examines the process of the technology development cycle. Discusses the impact of present and developing technology on the criminal justice system. 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 medico-legal 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 276 (3 CR.)
HAIR AND FIBER MORPHOLOGY
 Teaches identification and examination methods (analytical and comparative) for human and animal hair and natural and manmade fibers as physical evidence in criminal investigations and prosecutions. 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 in the "Description of Courses" section.

ADMINISTRATION SUPPORT TECHNOLOGY

AST 101 (3 CR.)
KEYBOARDING I
 Teaches the alpha/numeric keyboard with emphasis on correct techniques, speed, and accuracy. Teaches formatting of basic personal and business correspondence, reports, and tabulation. Lecture 3 hours per week.

AST 102 (3 CR.)
KEYBOARDING II
 Prerequisite is AST 101. Develops keyboarding and document production skills with emphasis on preparation of specialized business documents. Continues skill-building for speed and accuracy. Lecture 3 hours per week.

AST 107 (3 CR.)
EDITING/PROOFREADING SKILLS
 Develops skills essential to creating and editing business documents. Covers grammar, spelling, diction, punctuation, capitalization, and other usage problems. Lecture 3 hours per week.

AST 108 (1 CR.)
TELEPHONE TECHNIQUES
 Provides guidelines and techniques for communicating effectively on the telephone and for handling telephone problems efficiently, pleasantly, and constructively. Lecture 1 hour per week.

AST 117 (1 CR.)
KEYBOARDING FOR COMPUTER USAGE
 Teaches the alphabetic keyboard and 10-key pad. Develops correct keying techniques. Lecture 1 hour per week.

AST 130 (3 CR.)**OFFICE PROCEDURES**

Prerequisite AST 101. Introduces general functions and duties performed in the office. Lecture 3 hours per week.

AST 137 (3 CR.)**RECORDS MANAGEMENT**

Teaches filing and records management procedures for hard copy, electronic, and micrographic systems. Identifies equipment, supplies, and solutions to records management problems. Lecture 3 hours per week.

AST 140 (1 CR.)**INTRODUCTION TO WINDOWS**

Introduces students to Windows and provides basic concepts and commands necessary in the Windows environment. Lecture 1 hour per week.

AST 141 (3 CR.)**WORD PROCESSING I**

Prerequisite is AST 101 or equivalent. Teaches creating and editing documents including line and page layouts, columns, fonts, search/replace, cut/paste, spell/thesaurus, and advanced editing and formatting features of word processing software. Lecture 3 hours per week.

AST 142 (3 CR.)**WORD PROCESSING II**

Prerequisite is AST 141 or equivalent. Teaches advanced software applications. Lecture 3 hours per week.

AST 147 (1 CR.)**INTRODUCTION TO PRESENTATION SOFTWARE**

Introduces presentation options including slides, transparencies, and other forms of presentations. Lecture 1 hour per week.

AST 154 (1 CR.)**INTRODUCTION TO VOICE RECOGNITION SOFTWARE**

Teaches the computer user to use the voice as an input device to compose documents and to give commands directly to the computer. Since this new technology is being used in many business, medical, and legal offices, students should be prepared to use this input device. Lecture 1 hour per week.

AST 155 (1 CR.)**INTRODUCTION TO DESKTOP INFORMATION MANAGEMENT**

Teaches desktop information management to organize schedules through the calendar. Students learn how to manage electronic messages, appointments, contacts, tasks, and files. Students prepare for Core Microsoft Outlook MOUS Exam. Lecture 1 hour per week.

AST 160 (1 CR.)**LEARNING THE INTERNET FOR BUSINESS**

Introduces students to basic Internet terminology and services including e-mail, www browsing, search engines, and other services. Provides an introduction to electronic commerce in an office environment. Lecture 1 hour per week.

AST 171 (3 CR.)**INTRODUCTION TO CALL CENTER SERVICES**

Introduces concepts and skills needed to be an effective customer service representative for a telephone service operation. Covers call center theory and technology, interpersonal communication skills, customer relations attitudes, telecommunications techniques, and professional procedures to handle a variety of customer service sales requests. Lecture 3 hours per week.

AST 205 (3 CR.)**BUSINESS COMMUNICATIONS**

Teaches techniques of oral and written communications. Emphasizes writing and presenting business-related materials. Lecture 3 hours per week.

AST 206 (3 CR.)**PROFESSIONAL DEVELOPMENT**

Develops professional awareness in handling business and social situations. Emphasizes goal setting, critical thinking, decision making, and employment skills. Lecture 3 hours per week.

AST 230 (3 CR.)**INTRODUCTION TO OFFICE TECHNOLOGY**

Introduces principles, methods, and techniques involved in office technology. Emphasizes the use of microcomputer equipment and software. Lecture 3 hours per week.

AST 232 (3 CR.)**MICROCOMPUTER OFFICE APPLICATIONS**

Prerequisite is AST 101 or equivalent. Teaches production of business documents using word processing, databases, spreadsheets, and presentation software. Emphasizes document production to meet business and industry standards. Lecture 3 hours per week.

AST 234 (3 CR.)**RECORDS AND DATABASE MANAGEMENT**

Teaches filing and records management procedures using microcomputer database software. Incorporates both manual and electronic methods for managing information. Lecture 3 hours per week.

AST 236 (3 CR.)**SPECIALIZED SOFTWARE APPLICATIONS**

Prerequisite is AST 101 or equivalent. Teaches specialized integrated software applications on the microcomputer. Emphasizes document production to meet business and industry standards. Lecture 3 hours per week.

AST 243 (3 CR.)

OFFICE ADMINISTRATION I

Prerequisite is AST 101. Develops an understanding of the administrative support role and the skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes the development of critical thinking, problem solving, and job performance skills in a business office environment. Lecture 3 hours per week.

AST 244 (3 CR.)

OFFICE ADMINISTRATION II

Prerequisite is AST 243 or equivalent. Enhances skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes administrative and supervisory role of the office professional. Includes travel and meeting planning, office budgeting and financial procedures, international issues, and career development. Lecture 3 hours per week.

AST 253 (3 CR.)

DESKTOP PUBLISHING I

Prerequisite is AST 101 or equivalent and experience in using a word processing package. Introduces specific desktop publishing software. Teaches document layout and design, fonts, type styles, style sheets, and graphics. Lecture 3 hours per week.

AST 254 (3 CR.)

DESKTOP PUBLISHING II (PAGEMAKER OR VENTURA)

Prerequisite is AST 253 or equivalent. Presents advanced features of desktop publishing software, culminating in the layout and design of complex multi-page documents. Lecture 3 hours per week.

AST 257 (3 CR.)

WP DESKTOP PUBLISHING

Prerequisite is AST 101 or equivalent and experience in using the specified word processing software. Uses word processing software to teach advanced document preparation. Lecture 3 hours per week.

AST 260 (3 CR.)

PRESENTATION SOFTWARE

Teaches creation of slides including use of text, clip art, and graphs. Includes techniques for enhancing presentations with on-screen slide show as well as printing to transparencies and handouts. Incorporates use of sound and video clips. Lecture 3 hours per week.

AST 265 (3 CR.)

LEGAL OFFICE PROCEDURES I

Co-requisite AST 102 or equivalent. Introduces general office procedures used in law offices and courts. Lecture 3 hours per week.

AST 271 (3 CR.)

MEDICAL OFFICE PROCEDURES I

Co-requisite is AST 102 or equivalent. Covers medical office procedures, records management, preparation of medical reports, and other medical documents. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

AIR CONDITIONING AND REFRIGERATION

AIR 111 (3 CR.)

AIR CONDITIONING AND REFRIGERATION CONTROLS I

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

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 is 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

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

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**

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 is AIR 111. 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**

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 is 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**

Prerequisite is AIR 134. 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 is 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 is AIR 155. 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 in the "Description of Courses" section.

AMERICAN SIGN LANGUAGE

Additional sign language courses are listed under INTERPRETER EDUCATION.

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 non-manual 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 & 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 220 (3 CR.)**COMPARATIVE LINGUISTICS: ASL & 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**.

ARABIC**ARA 101-102 (5 CR.) (5 CR.)****BEGINNING ARABIC I-II**

Prerequisite for ARA 102 is 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 is 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 111-112 (3 CR.) (3 CR.)**CONVERSATION IN ARABIC I-II**

Prerequisite for ARA 112 is ARA 111. Emphasizes spoken Arabic, stressing fluency and correctness of structure, pronunciation and vocabulary. Lecture 3 hours per week.

ARA 201-202 (3 CR.) (3 CR.)**INTERMEDIATE ARABIC I-II**

Prerequisite is ARA 102. Prerequisite for ARA 202 is 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 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" 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 & 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 & 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 is 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 201 (3 CR.)**HISTORY OF MODERN ARCHITECTURE**

Surveys architecture from 19th century to present, with emphasis on philosophy of design, form, and structure. Lecture 3 hours per week.

ARC 216 (3 CR.)**MANUAL ARCHITECTURAL RENDERING AND PRESENTATION**

Prerequisite is ARC 121 or equivalent. Presents techniques of rendering and principles of art as related to architectural presentation. Covers architectural lettering and layout, free hand sketching, and perspective drawing in various media, including pencil, ink, and tempera. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ARC 225 (3 CR.)**SITE PLANNING AND TECHNOLOGY**

Co-requisite is 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 is 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 is 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 are 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 in the "Description of Courses" 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 103-104 (3 CR.) (3 CR.)**HISTORY OF FAR EASTERN ART I-II**

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 non-technical 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 non-representational 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 3 hours per week.

ART 117 (3 CR.)

DESIGN FOR THE WEB II

Prerequisite is 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 3 hours per week.

ART 121-122 (4 CR.) (4 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 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 130 (4 CR.)

INTRODUCTION TO MULTIMEDIA

Introduces the student to the basic components of multimedia: text, graphics, animation, sound, and video, and explores how the components combine to create a multimedia product. Emphasizes the design aspects of multimedia projects and teaches the techniques required to develop a presentation. Introduces Web design issues. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 131-132 (4 CR.) (4 CR.)

FUNDAMENTALS OF DESIGN I-II

Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 135 (4 CR.)

VISUAL COMMUNICATIONS

Prerequisite or co-requisite is ART 131. Studies intermediate design concepts applicable to all fields of communication arts. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 140 (4 CR.)

INTRODUCTION TO GRAPHIC SKILLS

Teaches basic studio skills necessary for communication design students. Emphasizes use of drafting equipment and materials such as knives, pencils, pens, brushes, glues, and papers. Includes introductory production skills both traditional and electronic. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 141-142 (4 CR.) (4 CR.)

TYPOGRAPHY I-II

Prerequisite is ART 140 or division approval. Studies the history of letter forms and typefaces and examines their uses in contemporary communications media. Emphasizes applications to specific design problems. Includes identification and specification of type, copy fitting, and hands-on typesetting problems. Use of the microcomputer as a tool is included in the instruction. Lecture 2 hours. Studio instruction 4 hours. Total 6 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 (4 CR.) (4 CR.)

CERAMICS I-II

Presents problems in the design and production of functional and nonfunctional ceramic works. Includes handbuilding and the use of the potter's wheel, clays, and glazes. Lecture 2 hours. Studio instruction 4 hours. Total 6 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 (4 CR.)**ANIMATION I**

Prerequisite is ART 121. Introduces the student to the basic techniques of animation, both traditional and computer generated. Teaches theoretical elements of the aesthetics of sequential imagery. Provides practical experience in animation. Exposes students to a variety of animation techniques through lectures, presentations, classroom work, and outside assignments. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 204 (4 CR.)**ANIMATION II**

Prerequisites are ART 203 and 207. Continues to develop the student's skills in the techniques of animation. Emphasizes the electronic means of transforming both two- and three-dimensional designs into complete, high-quality animations and transferring them to videotape. Teaches the advanced techniques of three-dimensional computer animation. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 207 (4 CR.)**3D MODEL RENDERING**

Introduces the student to the basic principles of three-dimensional objects and environments with both traditional methods and materials and those inherent in the microcomputer-based system. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 208 (4 CR.)**VIDEO TECHNIQUES**

Addresses the fundamentals of video technology as applied to the creation of a multimedia project. Focuses on the aesthetics of editing. Extends the capabilities of graphic designers and artists and allows them to transfer art work and animation from the computer to video, and to capture video frames for use in multimedia design on the computer. Instructs students in the development of sophisticated typographic design. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 211-212 (3 CR.) (3 CR.)**HISTORY OF AMERICAN ART I-II**

Surveys the history of American art from the 1600's to the present. Emphasizes architecture, sculpture, and painting. Includes crafts, decorative arts, and photography. Lecture 3 hours per week.

ART 213-214 (3 CR.) (3 CR.)**ITALIAN ART I-II**

Prerequisites are ART 101-102. Surveys Italian art from Cimabue to Canaletto. Includes sculpture, painting, and architecture. Lecture 3 hours per week.

ART 217-218 (4 CR.) (4 CR.)**ELECTRONIC GRAPHIC DESIGN I-II**

Prerequisites for ART 217 are ART 121, ART 131, ART 135, ART 141. Prerequisite for ART 218 is ART

217. Additional prerequisites or co-requisites for ART 218: ART 142, ART 265. Focuses on creative concepts of graphic design problem-solving using electronic technology; includes techniques specific to computer-generated publication design and imagery. Electronic Graphic Design II includes use of electronic color models and principles of pre-press production. Required for students pursuing careers in graphic design with emphasis on use of the computer. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 220 (3 CR.)**ADVANCED DESIGN FOR THE WEB**

Presents advanced features of web design and technology used by designers. Explores advanced design problems. Lecture 3 hours per week.

ART 221-222 (4 CR.) (4 CR.)**DRAWING III-IV**

Prerequisite for ART 221 is ART 122. Prerequisite for ART 222 is 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 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 223 (4 CR.)**ETCHING I**

Prerequisite is ART 131. Develops skills in etching processes including aquatint, drypoint, and color printing. Includes field trips where applicable. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 230 (4 CR.)**MULTIMEDIA II**

Prerequisites are 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 items. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 231-232 (4 CR.) (4 CR.)**SCULPTURE I-II**

Prerequisite is 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 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 235 (4 CR.)**FUNCTIONAL CERAMICS**

Prerequisite is ART 154. Explores the design and production of functional ceramics, including handbuilding and use of the wheel. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 236 (4 CR.)

SCULPTURAL CERAMICS

Prerequisite is ART 154. Explores the design and production of sculptural ceramics, including handbuilding and use of the wheel. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 237 (4 CR.)

CERAMIC DECORATION

Prerequisite is ART 154. Explores ceramic decoration techniques used in functional and nonfunctional ceramics. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 241-242 (4 CR.) (4 CR.)

PAINTING I-II

Prerequisite is ART 122 or division approval. Introduces abstract and representational painting in acrylic and/or oil with emphasis on color, composition and value. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 243-244 (4 CR.) (4 CR.)

WATERCOLOR I-II

Prerequisite is ART 131 or division approval. Presents abstract and representational painting in watercolor with emphasis on design, color, composition, technique, and value. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 250 (3 CR.)

HISTORY OF DESIGN

Surveys the development of graphic design and illustration with emphasis on the 19th and 20th 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 253-254 (4 CR.) (4 CR.)

DESIGN III-IV

Prerequisites for ART 253 are ART 131 and 132. Prerequisite for ART 254 is ART 253. Applies basic design concepts to complex problems. Introduces related research as appropriate. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 263-264 (4 CR.) (4 CR.)

INTERACTIVE DESIGN I-II

Focuses on creative concepts of design problem solving for interactive design: techniques specific to Web, multimedia for the Web, and other interactive design products. Advanced interactive design functions such as animation, rollovers, and audio are covered in ART 264. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 265 (4 CR.)

GRAPHIC TECHNIQUES

Prerequisite is ART 140. Applies the study of printing processes to the preparation of art work. Teaches printing processes, terminology, and related materials. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 271-272 (4 CR.) (4 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 4 hours. Total 6 hours per week.

ART 277 (4 CR.)

ADVANCED PRINTMAKING

Provides additional opportunity for individual exploration in selected printmaking processes. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 278-279 (4 CR.) (4 CR.)

3D COMPUTER DESIGN I-II

Prerequisite for ART 278 is ART 283. Prerequisite for ART 279 is 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 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 2 hours. Studio instruction 4 hours. Total 6 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 in the "Description of Courses" 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 is 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 in the "Description of Courses" section.

AUTOMOTIVE**AUT 100 (2 CR.)
INTRODUCTION TO AUTOMOTIVE SHOP PRACTICES**

Prerequisite or co-requisite 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 is 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, re-facing 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 co-requisite 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**

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 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 is AUT 111 or AUT 241 or program approval. Presents logical diagnostic paths to identify vehicle HC-CO, O₂, and NO_x 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 usage demonstrated. Lecture 2 hours per week. May be repeated as needed.

AUT 236 (4 CR.)

AUTOMOTIVE CLIMATE CONTROL

Prerequisite is 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

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 is AUT 241. 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, 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.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

BIOLOGY

BIO 101-102 (4 CR.) (4 CR.)

GENERAL BIOLOGY I-II

Prerequisite is a satisfactory placement score for ENG 111. Prerequisite for BIO 102 is BIO 101, or division approval. Explores fundamental characteristics of living matter from the molecular level to the ecological community with emphasis on general biological principles. Introduces the diversity of living organisms, their structure, function and evolution. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

BIO 107 (4 CR.)

BIOLOGY OF THE ENVIRONMENT

Prerequisite is a satisfactory placement score for ENG 111. Presents the basic concepts of environmental science through a topical approach. Includes the scientific method, population growth and migration, use of natural resources and waste management, ecosystem simplification recovery, evolution, biogeochemical cycles, photosynthesis and global warming, geological formations, atmosphere and climate, and ozone depletion and acid deposition. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 110 (4 CR.)

GENERAL BOTANY

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

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

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 170** (2 CR.)
BIOTECHNOLOGY METHODS
 Provides students with laboratory skills needed for employment in the biotechnology industry. Focuses on widely used biotechnology procedures in areas of DNA analysis, protein analysis, tissue culture, monoclonal antibodies, quality control assays, and diagnostic procedures. Laboratory 6 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 205** (4 CR.)
GENERAL MICROBIOLOGY
 Prerequisites are one year of college biology and one year of college chemistry 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
 Prerequisite is one year of college biology and one year of college chemistry 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 are BIO 101–102. 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 are one year of college biology and one year of college chemistry 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** (2 CR.)
BIOTECHNOLOGY RESEARCH METHODS AND SKILLS
 Prerequisite is BIO 101 or BIO 173. Co-requisite is BIO 253. 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. Emphasis is on lab safety, documentation, quality control, and use of standard operating procedures. Laboratory 6 hours per week. Total 6 hours per week.

- BIO 251** (4 CR.)
PROTEIN APPLICATIONS IN BIOTECHNOLOGY
 Prerequisite is BIO 250, BIO 253, or instructor permission. 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 are BIO 250 and BIO 253 or instructor permission. 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, 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
 Prerequisite(s): BIO 101 or BIO 173, and CHM 111. 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 101 or BIO 173, CHM 111–112, BIO 170, and BIO 253. 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 256 (4 CR.)

GENERAL GENETICS

Prerequisites are one year of college biology and one year of college chemistry 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 are BIO 101–102 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

Prerequisite BIO 101–102 or divisional 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 in the “Description of Courses” section.

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, 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; 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 are 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 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 is 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 MANAGEMENT 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 in the "Description of Courses" 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 is 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 is MTH 163 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 is 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 226 (3 CR.)

COMPUTER BUSINESS APPLICATIONS

Prerequisite is 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 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 in the "Description of Courses" section.

CHEMISTRY**CHM 101-102 (4 CR.) (4 CR.)****GENERAL CHEMISTRY I-II**

Prerequisites for CHM 101 are satisfactory placement scores for ENG 111 and MTH 4 (or completion of MTH 3). Satisfactory completion of CHM 101 (or its equivalent) is a prerequisite for enrollment in CHM 102. 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.)**COLLEGE CHEMISTRY I-II**

Prerequisites for CHM 111 are satisfactory placement scores for ENG 111 and MTH 163; high school chemistry also strongly recommended. Satisfactory completion of CHM 111 (or its equivalent) is a prerequisite for CHM 112. 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**

Prerequisite for CHM 121 is a satisfactory score on the ENG 111 placement test. Prerequisite for CHM 122 is 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 are CHM 112 or equivalent and a satisfactory placement score for ENG 111. CHM 241 is prerequisite for CHM 242. 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 for CHM 245 is CHM 112. May be taken concurrently with or following CHM 241-242. CHM 245 is prerequisite for CHM 246. Is taken by chemistry and chemical engineering majors. Includes qualitative organic analysis. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

CHM 255 (3 CR.)**INSTRUMENTAL ANALYSIS**

Prerequisite is CHM 112 or equivalent. Introduces general principles and application of specific instrumental methods. Emphasizes practical analysis of everyday and/or industrial substances. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CHM 260 (3 CR.)**INTRODUCTORY BIOCHEMISTRY**

Prerequisite is a satisfactory placement score for ENG 111 and CHM 112 or CHM 122 or division approval. 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 in the "Description of Courses" 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

Co-requisite is ENG 111. 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, 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. One hour seminar, 4 hours field placement. Total 5 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 prosocial 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 way 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. One hour seminar. 4 hours field placement. Total 5 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 in the "Description of Courses" section.

CHINESE

**CHI 101-102 (5 CR.) (5 CR.)
BEGINNING CHINESE I-II**

Prerequisite for CHI 102 is 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 is CHI 103. Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Does not fulfill foreign language requirement for A.A. degree. Lecture 3 hours per week.

**CHI 121-122 (3 CR.) (3 CR.)
BEGINNING CHINESE READING AND WRITING I-II**

Prerequisite or co-requisite is CHI 103-104 or equivalent. Introduces the reading and writing of modern standard Chinese. Emphasizes vocabulary buildup and practice in reading and writing. May be taken in conjunction with Beginning Spoken Chinese. Lecture 3 hours per week.

**CHI 201-202 (4 CR.) (4 CR.)
INTERMEDIATE CHINESE I-II**

Prerequisite for CHI 201 is CHI 102. 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 115 – Technical Math. 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 is 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 is 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 241 (3 CR.)

APPLIED HYDRAULICS AND DRAINAGE I

Presents the basic fundamentals of hydrology and hydraulics to the practical problems of drainage design. The use of design aids with supportive theory is stressed to insure an understanding of the background, the theory of development, basic assumptions and limitations of the various methods of estimating storm water runoff and hydraulic structure design. Lecture 3 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.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

COMMUNICATION STUDIES AND THEATRE

Effective Fall 2009, all SPD course prefixes changed to CST

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 communication competence and confidence 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 study of speech physiology and applied phonetics. Lecture 3 hours per week.

CST 115 (3 CR.)

SMALL GROUP COMMUNICATION

Emphasizes the development of presentational ability in multiple group settings with an emphasis on decision-making, maintenance, and leadership and participant skills. Incorporates a preliminary study of group dynamics. Lecture 3 hours per week.

CST 125 (3 CR.)

INTERVIEWING

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.

CST 126 (3 CR.)

INTERPERSONAL COMMUNICATION

Teaches interpersonal communication skills for both daily living and the world of work as it applies to perception, self-concept, self-disclosure, listening and feedback, nonverbal communication, attitudes, assertiveness, conflict resolution, and other interpersonal skills. Lecture 3 hours per week.

CST 130 (3 CR.)**INTRODUCTION TO THE THEATRE**

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.

CST 131–132 (3 CR.) (3 CR.)**ACTING I–II**

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.

CST 136 (1–6 CR.)**THEATRE WORKSHOP**

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.

CST 137 (3 CR.)**ORAL INTERPRETATION**

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.

CST 141 (3 CR.)**THEATRE APPRECIATION I**

Increases student's knowledge and enjoyment of the theatre. Considers process, style, and organization of written and performed drama. Lecture 3 hours per week.

CST 151–152 (3 CR.) (3 CR.)**FILM APPRECIATION I–II**

Aims to increase the student's knowledge and enjoyment of film and film criticism through discussion and viewing of movies. Lecture 3 hours per week.

CST 227 (3 CR.)**BUSINESS AND PROFESSIONAL COMMUNICATION**

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.

CST 229 (3 CR.)**INTERCULTURAL COMMUNICATION**

Develops interpersonal, group, and presentational communication skills that are applicable in personal and professional cross-cultural relationships. Focuses on differences in values, message systems, and communication rules. Lecture 3 hours per week.

CST 231–232 (3 CR.) (3 CR.)**HISTORY OF THEATRE I–II**

Analyzes and studies theatre history to include architecture, performers and performance, playwrights, stage, production methods, and audience from the Greeks through modern drama. Lecture 3 hours per week.

CST 233–234 (4 CR.) (4 CR.)**REHEARSAL AND PERFORMANCE I–II**

Explores various aspects of the theatre through involvement in college theatre production. Lecture/laboratory 4 hours per week.

CST 241–242 (3 CR.) (3 CR.)**INTRODUCTION TO DIRECTING I–II**

Prerequisites are 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.

CST 250 (3 CR.)**THE ART OF THE FILM**

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.

CST 251 (3 CR.)**STAGE LIGHTING AND SOUND**

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.

CST 267 (3 CR.)**CREATIVE DRAMA**

Explores uses of drama through story dramatization, role-playing, and sensory exercises. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" 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 is 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 201 (4 CR.) **COMPUTER AIDED DRAFTING AND DESIGN I**

Co-requisite is 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 is 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 is 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 is 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 is CAD 202. Prerequisite for CAD 239 is 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 not limited to, sketch profiles; geometric and dimensional constraints; 3-D features; model generation by extrusion, revolution and sweep; and the creation of 2-D 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 in the “Description of Courses” section.

COMPUTER SCIENCE

CSC 100 (1 CR.) **INTRODUCTION TO COMPUTER USAGE**

Co-requisites are CSC 201 and a satisfactory score on the proficiency examination for MTH 173 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 is CSC 110 or permission of the instructor. 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**

Co-requisites are CSC 201 and a satisfactory score on the proficiency examination for MTH 173 or equivalent, or division approval. 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, required for students taking CSC 201. If you have already taken CSC 100, CSC 185 is not required.) Lecture 1 hour per week.

CSC 201 (4 CR.)**COMPUTER SCIENCE I**

Prerequisite is CSC 130. Co-requisites are MTH 173 or division approval, and CSC 185. If you have already taken CSC 100, CSC 185 is not required. 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 are CSC 201 and MTH 173. Co-requisite is MTH 174. 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 is 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 is 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 in the "Description of Courses" section.

CONTRACT MANAGEMENT**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 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: CON 100; 120 is a prerequisite for 121. 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, Shaping Business Arrangements to cover an integrated case study approach. Lecture 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 is 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 HYGIENE

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 (2 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 1 hour. Laboratory 3 hours. Total 4 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 is 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 health care 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**

Prerequisites are DNH 113, 114, or 115. 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 health care, 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**

Prerequisites are DNH 115, DNH 120 and DNH 216. 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 is 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 is 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 in the "Description of Courses" section.

DIAGNOSTIC MEDICAL SONOGRAPHY

**DMS 100 (1 CR.)
ORIENTATION TO THE SONOGRAPHY PROFESSION**

Presents brief history of 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 2-D, 3-D and 4-D imaging, 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 2-D 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 is 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 (3 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 2 hours. Laboratory 3 hours. Total 5 hours per week.

**DMS 212 (3 CR.)
OBSTETRICAL AND GYNECOLOGICAL SONOGRAPHY**

Co-requisite is 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 2 hours. Laboratory 3 hours. Total 5 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 INSTRUMENTATION 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 INSTRUMENTATION 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 the students' ultrasonic skills in a diagnostic environment; may include on-campus labs, 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 the students' ultrasonic skills in a diagnostic environment; may include on-campus labs, 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 is 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 2-D and 3-D 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 graduates' 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 2-D 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 graduates' entry into the career of sonography. Lecture 2 hours per week.

DIESEL MECHANICS**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, 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 is 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 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 such power train components 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. Studies food composition and the nutrients essential to the health of human life throughout 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 are DIT 121, 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 in the "Description of Courses" section.

DRAFTING

See COMPUTER AIDED DRAFTING.

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 115 (3 CR.)**UNDERSTANDING OUR ENVIRONMENT: AN ECONOMIC INTRODUCTION**

Explores basic economic theory as it relates to the issues of environmental problems and natural resource use. Examines the approaches to local, state, and national environmental policy. Investigates issues of sustainability with a global perspective. 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 in the "Description of Courses" section.

EDUCATION**EDU 114 (3 CR.)****DRIVER TASK ANALYSIS**

Prerequisite is eligibility for ENG 3 and 5 or ESL 13. 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**

Prerequisite is successful completion of 24 credits of transfer courses. 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 is 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, 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.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

ELECTRICAL TECHNOLOGY

ELE 115 (3 CR.) **BASIC ELECTRICITY**

Prerequisite: MTH 2 or equivalent. Covers basic circuits and theory of fundamental concepts of electricity. Presents a practical approach to discussion of components and devices. Lecture 3 hours per week.

ELE 118 (2 CR.) **PRACTICAL ELECTRICITY**

Prerequisite ELE 115 or equivalent. Teaches fundamentals of electricity, terminology and symbols, diagrams, the principles essential to the understanding of general practices, safety and the practical aspects of residential and non-residential wiring, electrical installation. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

ELE 138 (2 CR.) **NEC REVIEW**

Prerequisite ELE 153 or equivalent. Covers purpose and interpretation of the National Electrical Code as well as various charts, code rulings and wiring methods. Prepares the student to take the journeyman-level exam. Lecture 2 hours per week.

ELE 149 (3 CR.) **WIRING METHODS IN INDUSTRY**

Prerequisite ELE 118 or equivalent. Studies the fundamentals of industrial power distribution, circuits, switches, enclosures, panels, fuses, circuit breakers, transformers, and wiring methods, using various charts and tables of the National Electrical Code. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 152 (4 CR.) **ELECTRICAL-ELECTRONIC CALCULATIONS I**

Prerequisite ELE 149 or equivalent. Includes general math, scale readings, conversions between units of measure and algebra with exponents and radicals as it applies to DC circuits. Lecture 4 hours per week.

ELE 153 (4 CR.) **ELECTRICAL-ELECTRONIC CALCULATIONS II**

Prerequisite ELE 152. Includes a review of DC applications, angular measurements, right triangle ratios, vector and vector algebra as it applies to AC circuits. Lecture 4 hours per week.

ELE 158 (3 CR.) **AC AND DC CIRCUITS AND MACHINES**

Prerequisite ELE 118 or equivalent. Co-requisite: MTH 114 or equivalent. Studies the fundamentals of direct and alternating current, resistance, capacitance,

magnetism, inductance, direct and alternating current machinery. Lecture 3 hours per week.

ELE 159 (3 CR.) **ELECTRICAL MOTORS**

Prerequisite ELE 118 or equivalent. Teaches practical applications and fundamentals of AC and DC machines. Includes the concepts of magnetism and generators used in electrical motor applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 297 (1-5 CR.) **COOPERATIVE EDUCATION IN ELECTRICITY**

Prerequisite ELE 138 or equivalent. This course will refine all of the skills learned to date and prepare the student to take the state exam to become a journeyman electrician. Course may be repeated once for credit.

ELECTRONIC SERVICING

ESR 180 (4 CR.) **PERSONAL COMPUTER NETWORKING**

Prerequisite is ETR 285. Studies widely used net topologies and cabling methods, including the capabilities and limitations of each. Covers the use of hubs, routers, bridges, and network operating systems. Includes network management and layout. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ELECTRONICS TECHNOLOGY

ETR 106 (2 CR.) **BASIC PROGRAMMING APPLIED TO ELECTRICAL/ELECTRONIC CALCULATIONS**

Teaches the application of a high-level language to electrical and electronic problem solving and circuit analysis. Introduces an operating system. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

ETR 107 (4 CR.) **PROGRAMMING APPLICATIONS FOR ELE/ETR CALCULATIONS**

Focuses on applications of a computer language(s) to electrical/electronic problem solving and circuit analysis. Requires the preparation of a computer program(s) meeting problem specifications. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 113-114 (4 CR.) (4 CR.) **DC AND AC FUNDAMENTALS I-II**

For ETR 113, prerequisite or co-requisite is MTH 166 or permission of instructor. For ETR 114, prerequisite is ETR 113. Studies DC and AC circuits, basic electrical components, instruments, network theorems, and techniques used to predict, analyze, and measure electrical quantities. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 144 (4 CR.)**DEVICES AND APPLICATIONS II**

Prerequisite or co-requisite is ETR 114. Teaches theory of active devices and circuits, such as diodes, power supplies, transistors (BJT's), amplifiers and their parameters, FETs, and op amps. May include UJT's, oscillators, RF amplifiers, thermionic devices, and others. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 158 (4 CR.)**ELECTRONIC CIRCUITS FOR COMPUTERS**

Studies the basic electrical and electronic principles used in repair and troubleshooting of computer systems. Includes Ohm's and Kirchoff's laws, capacitor and diode circuit analysis, power supply circuits, and transistor fundamentals. Use of the laboratory equipment (oscilloscope and DMM) is stressed. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 159 (4 CR.)**MICROCOMPUTER PERIPHERALS**

Prerequisite is ETR 285. Covers basic knowledge of typical peripheral devices found in a micro-computer system. Includes devices such as printer, disk drive, CRT monitor, and keyboard. Emphasizes troubleshooting techniques. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 167 (4 CR.)**LOGIC CIRCUITS AND SYSTEMS**

Studies digital switching and logic circuits, numbering systems, Boolean algebra, logic gates, and families. Includes fundamental concepts of microprocessor operation and interface circuitry. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 219 (3 CR.)**INTRODUCTION TO ELECTRICAL MACHINES**

Studies the construction, theory of operations and applications of AC and DC machines. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ETR 241 (4 CR.)**ELECTRONIC COMMUNICATIONS I**

Prerequisite or co-requisite for ETR 241 is ETR 250. Studies noise, information and bandwidth, modulation and demodulation, transmitters and receivers, wave propagation, antennas, and transmission lines. May include broad band communication systems, microwave, both terrestrial and satellite, fiber optics, multiplexing, and associated hardware. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 250 (4 CR.)**SOLID STATE CIRCUITS**

Prerequisite is ETR 144. Teaches theory and application of amplifiers and oscillators. Includes amplifier circuit configurations, amplifier classes, operational amplifiers, power amplifiers, band-width distortion, and principles of feedback. Lecture 3

hours. Laboratory 3 hours. Total 6 hours per week.

ETR 261 (4 CR.)**MICROPROCESSOR APPLICATION I**

Prerequisite is ETR 167. Teaches the fundamentals of microprocessors, including architecture, internal operations, memory, I/O devices, machine level programming, and interfacing. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 285 (4 CR.)**FUNDAMENTALS OF MICROCOMPUTER REPAIR**

Pre- or co-requisite is ETR 158. Provides the student with an exposure to the various techniques and procedures used to troubleshoot a microcomputer. May include an overview of a particular micro-processor system, use of isolation flow charts, test point charts, prints, diagnostic routines, component testing, and fault isolation labs. 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 in the "Description of Courses" section.

EMERGENCY MEDICAL SERVICES**EMS 111 (6 CR.)****EMERGENCY MEDICAL TECHNICIAN: BASIC**

Prerequisite: CPR certification at the Health Care Provider level. Co-requisite: EMS 120. Prepares student for certification as a Virginia and 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 Medicine Technician Basic. Lecture 4 hours per week. Laboratory 4 hours per week. Total 8 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 113, dependent upon the program in which the student is participating and is a co-requisite to both EMS 111 and EMS 113. Lecture 1 hour per week.

EMS 151 (4 CR.)**INTRODUCTION TO ADVANCED LIFE SUPPORT**

Co-requisite: EMS 170, Clinical and Field Internship. 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 per week. Laboratory 2 hours per week. 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 are 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 (2 CR.)
ALS: SPECIAL POPULATIONS

Prerequisites: EMS 151 and EMS 153. Pre- or Co-requisite 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 1 hour per week. Laboratory 2 hours per week. Total 3 hours per week.

EMS 161 (1 CR.)
BASIC TRAUMA LIFE SUPPORT (BTLS)

Prerequisites: 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)

Prerequisites: 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)

Prerequisites: EMS 100, 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.

EMS 170 (1 CR.)
ALS INTERNSHIP I

Co-requisite: 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.

EMS 172 (2 CR.)
ALS CLINICAL INTERNSHIP II

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.

EMS 173 (1 CR.)**ALS FIELD INTERNSHIP II**

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.

EMS 201 (2 CR.)**EMS PROFESSIONAL DEVELOPMENT**

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 2 hours per week.

EMS 205 (3 CR.)**ADVANCED PATHOPHYSIOLOGY**

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 health care provider in and out of the hospital environment. Lecture 3 hours per week.

EMS 207 (3 CR.)**ADVANCED PATIENT ASSESSMENT**

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 laboratory environment. Lecture 2 hours per week. Laboratory 2 hours per week. Total 4 hours per week.

EMS 209 (4 CR.)**ADVANCED PHARMACOLOGY**

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 and 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 per week. Laboratory 2 hours per week. Total 5 hours per week.

EMS 211 (2 CR.)**OPERATIONS**

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 per week. Laboratory 2 hours per week. Total 3 hours per week.

EMS 213 (1 CR.)**ALS SKILLS DEVELOPMENT**

Utilizes reinforcement and remediation of additional advanced life support skills, as needed. Laboratory 2 hours per week.

EMS 215 (1 CR.)**REGISTRY REVIEW**

Reviews material covered in the intermediate/paramedic program. Prepares the student for National Registry testing. Lecture 1 hour per week.

EMS 216 (1 CR.)**PARAMEDIC REVIEW**

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.

EMS 242 (1 CR.)**ALS CLINICAL INTERNSHIP III**

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.

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

Co-requisites are MTH 173 and 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 are MTH 173 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

Prerequisite is MTH 166 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)

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 are MTH 277 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 is 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 251-252 (3 CR.) (3 CR.) BASIC ELECTRIC CIRCUITS I-II

Prerequisite is MTH 174. Co-requisite is PHY 231. 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, 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

Co-requisite is 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; 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 is 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 in the "Description of Courses" section.

ENGLISH

ENG 1, 3, 4, and 5 require satisfactory scores on the English placement test. ENG 111 requires a qualifying score on the English placement test or on the English Proficiency Test (EPT) for nonnative speakers, or a score of 550 or better on the Critical Reading section of the SAT exam. ENG 111 is a prerequisite for ENG 112.

ENG 1 (5 CR.)**PREPARING FOR COLLEGE WRITING I**

Helps students discover and develop writing processes needed to bring their proficiency to the level necessary for entrance into their respective curricula. Guides students through the process of starting, composing, revising, and editing. Credits are not applicable toward graduation. Lecture 5 hours per week.

ENG 2 (3 CR.)**SPELLING AND VOCABULARY STUDY**

Helps students to improve spelling and develop vocabulary. Reviews common spelling patterns. Familiarizes the student with basic prefixes, suffixes, root words, and other word formations. Teaches effective use of the dictionary and thesaurus. Stresses recognizing words in reading context and using them effectively in writing. Credits are not applicable toward graduation. Lecture 3 hours per week.

ENG 3 (5 CR.)**PREPARING FOR COLLEGE WRITING II**

Emphasizes strategies within the writing process to help students with specific writing situations.

Develops techniques to improve clarity of writing and raise proficiency to the level necessary for entrance into particular curricula. Credits are not applicable toward graduation. Lecture 5 hours per week.

ENG 4 (5 CR.)**PREPARING FOR COLLEGE READING I**

Prerequisite: English language skills at the level required for admission to the college and based on appropriate COMPASS test scores. Helps students improve their reading processes to increase their understanding of reading materials. Includes word forms and meanings, comprehension techniques, and ways to control reading pace. Credits are not applicable toward graduation. Lecture 5 hours per week.

ENG 5 (5 CR.)**PREPARING FOR COLLEGE READING II**

Prerequisite: Placement into ENG 5 or successful completion of ENG 4. Helps students read critically and increase appreciation of reading. Guides students in making inferences, drawing conclusions, and detecting relationships between generalizations and supporting details. Includes interpreting graphic aids and basic library skills. Credits are not applicable toward graduation. Lecture 5 hours per week.

ENG 9 (3 CR.)**INDIVIDUALIZED INSTRUCTION IN WRITING**

Focuses on individual writing needs as required by placement test scores. Provides support for students simultaneously enrolled in ENG 111. Credits are not applicable toward graduation. Lecture 3 hours per week.

ENG 100 (3 CR.)**BASIC OCCUPATIONAL COMMUNICATION**

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: An English Placement Testing recommendation for ENG 108 or ENG 5 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**

Students must achieve satisfactory scores on placement tests or SATs as established by the VCCS and adopted by their College, or have satisfactorily

completed ENG 3 and ENG 5. 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 115 (3 CR.)

TECHNICAL WRITING

Prerequisite is 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 is 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 is 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 is 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 Web site layout, and develop Web site navigation for a variety of possible audiences. Lecture 3 hours per week.

ENG 125 (3 CR.)

INTRODUCTION TO LITERATURE

Prerequisite is 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 divisional 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 is 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 9, ENG 111, or ENG 139. 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 150 (3 CR.)

CHILDREN'S LITERATURE

Prerequisite is 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 200 (3 CR.)

INTRODUCTION TO LINGUISTICS

Prerequisite is 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 is 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 is 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 is 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 is ENG 112 or ENG 125, or equivalent, or division approval. Prerequisite for ENG 216 is 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 is ENG 112 or ENG 125, or equivalent, or division approval. Prerequisite for ENG 218 is 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 for ENG 219 is 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 is 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 is 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 237 (3 CR.)**INTRODUCTION TO POETRY**

Prerequisite is 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 is 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 is 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 245 (3 CR.)**MAJOR ENGLISH WRITERS**

Prerequisite is ENG 112 or ENG 125, or division approval. Examines major writers in English literary history. Involves critical reading and writing. Lecture 3 hours per week.

ENG 247 (3 CR.)**SURVEY OF POPULAR CULTURE**

Prerequisite is 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 251–252 (3 CR.) (3 CR.)**SURVEY OF WORLD LITERATURE I–II**

Prerequisite is 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 253–254 (3 CR.) (3 CR.)**SURVEY OF AFRICAN-AMERICAN LITERATURE I–II**

Prerequisite is 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 255 (3 CR.)

MAJOR WRITERS IN WORLD LITERATURE

Prerequisite is ENG 112 or ENG 125, or division approval. Examines major writers selected from a variety of literary traditions. Involves critical reading and writing. Lecture 3 hours per week.

ENG 256 (3 CR.)

LITERATURE OF SCIENCE FICTION

Prerequisite is 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.)

MYTHOLOGY

Prerequisite is 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.

ENG 261-262 (3 CR.) (3 CR.)

ADVANCED CREATIVE WRITING I-II

Prerequisite is 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.

ENG 267 (3 CR.)

THE MODERN NOVEL

Prerequisite is ENG 112 or ENG 125, or division approval. Studies the modern novel. Emphasizes appreciation and interpretation of selected novels. Requires critical reading and writing. Lecture 3 hours per week.

ENG 270 (3 CR.)

NON-WESTERN LITERATURE IN GLOBAL CONTEXT

Prerequisite is ENG 112. Examines non-western popular culture, written texts, film and mythology through the lens of comparative literature and the shifting horizons brought on by dynamic changes in global social and cultural values. Lecture 3 hours per week.

ENG 271-272 (3 CR.) (3 CR.)

THE WORKS OF SHAKESPEARE I-II

Prerequisite is ENG 112 or ENG 125, or division approval. Examines selected works of Shakespeare. Involves critical reading and writing. Lecture 3 hours per week.

ENG 273-274 (3 CR.) (3 CR.)

WOMEN IN LITERATURE I-II

Prerequisite is ENG 112 or ENG 125, or division approval. Examines literature by and about women. Involves critical reading and writing. Lecture 3 hours per week.

ENG 276 (3 CR.)

SOUTHERN LITERATURE

Prerequisite is ENG 112 or ENG 125, or division approval. Examines the themes and techniques of selected writers dealing with the American South as a distinctive cultural entity. Involves critical reading and writing. Lecture 3 hours per week.

ENG 279 (3 CR.)

FILM AND LITERATURE

Prerequisite is 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.

ENG 280 (3 CR.)

WRITING USER MANUALS

Prerequisite is 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.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

ENGLISH AS A SECOND LANGUAGE

A comprehensive English Proficiency Test (EPT) is required for all English as a Second Language (ESL) classes.

ESL 20 (10 CR.)

ENGLISH AS A SECOND LANGUAGE II

Prerequisite: Requires ability to understand basic reading materials as well as familiarity with basic grammatical structures as indicated by a placement test. Provides intensive instruction and practice at the low intermediate level. Provides an introduction to the sound system, 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.

ESL 24 (5 CR.)

ORAL AND WRITTEN COMMUNICATIONS I

Prerequisite: Requires ability to understand short spoken passages as well as familiarity with basic grammatical structures. Provides practice in the sound, stress, intonation, structural patterns, grammar, vocabulary, and idioms of beginning-level English. Lecture 5 hours per week.

ESL 31 (5 CR.)**COMPOSITION I**

Prerequisite: Requires ability to express ideas clearly in writing without a consistent pattern of grammatical errors as indicated by a placement exam or teacher recommendation from a previous level. 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.

ESL 32 (5 CR.)**READING I**

Prerequisite: Requires competency in reading as indicated by the placement test or by teacher recommendation from a previous level. 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: Requires competency in the English language as indicated by a placement test score or teacher recommendation from a previous level or from other college classes. 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 3**

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. Lecture 3 hours per week.

ESL 41 (5 CR.)**COMPOSITION II**

Prerequisite: Requires a sense of paragraph structure and development, appropriate use of verb forms, and command of basic sentence structures with some coordination and subordination, as indicated by a placement test and writing sample, or teacher recommendation from a previous level. 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: Requires competency in reading as indicated by the placement test or by teacher recommendation from a previous level. 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 4**

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. Lecture 3 hours per week.

ESL 48 (5 CR.)**WRITING WORKSHOP**

Prerequisite: Requires teacher recommendation from ESL 41. Students who enter ESL 48 should show the ability to recognize and manipulate grammatical structures and a sense of essay organization but lack the ability to successfully apply this knowledge to develop longer pieces of academic writing. 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. Lecture 5 hours per week.

ESL 51 (5 CR.)**COMPOSITION III**

Prerequisite: Requires competency in the English language and ability to write short essays in understandable English, as indicated by a placement test and writing sample, or by teacher recommendation from a previous level. 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: Requires competency in reading as indicated by the placement test or by teacher recommendation from a previous level. 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 is completion of ESL 51. Co-requisite is ESL 52. 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. Lecture 5 hours per week.

**ESL 72 (3 CR.)
SPELLING AND VOCABULARY**

Prerequisite: Requires completion of ESL 20 and ESL 24 or placement in Level 3 or higher. 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: Requires completion of ESL 20 and ESL 24 or placement in Level 3 or higher. 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.

Please contact the appropriate division for the availability of general usage courses as described in the “Description of Courses” section.

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

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

Prerequisites are not required, but 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 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, radiation, with particular emphasis on community action programs. Lecture 3 hours per week.

ENV 230 (3 CR.)

APPLICATIONS IN ENVIRONMENTAL SCIENCE

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; Identifying Sources of Pollution. Prerequisite(s): ENG 4, ENG 3, MTH 2, GIS 200. [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 in the “Description of Courses” 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 is 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 is 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 v. 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 market 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 in the "Description of Courses" 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; introduction to fire strategy and tactics. Lecture 3 hours per week.

FST 110 (3 CR.)**FIRE BEHAVIOR AND COMBUSTION**

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 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, and 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**

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 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

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

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

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

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 is 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 (5 CR.) (5 CR.)

BEGINNING FRENCH I-II

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

Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Does not fulfill the foreign language requirement for the Associate of Arts degree. Lecture 3 hours per week.

FRE 111-112 (3 CR.) (3 CR.)

CONVERSATION IN FRENCH I-II

Prerequisite is FRE 102 or equivalent. Emphasizes the spoken language, stressing correctness of structure, pronunciation, fluency, and vocabulary. Lecture 3 hours per week.

FRE 201-202 (3 CR.) (3 CR.)

INTERMEDIATE FRENCH I-II

Prerequisite is FRE 102 or equivalent. 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 is FRE 202 or equivalent. Continues to develop fluency through emphasis on idioms and other complex sentence structures. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

GEOGRAPHIC INFORMATION SYSTEMS**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 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 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, 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**

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; Identifying Sources of Pollution. Prerequisite (s): ENG 4, ENG 3, MTH 2, GIS 200. [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 (4 CR.)**EXPLORING OUR EARTH: INTRODUCTION TO REMOTE SENSING**

Prerequisite is 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 4 hours. Total 6 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 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 in the "Description of Courses" 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
 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. Lecture 3 hours per week.

GOL 206 (4 CR.)
PALEONTOLOGY
 Prerequisite: GOL 106. 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 is 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 is 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 in the "Description of Courses" section.

GERMAN

GER 101-102 (5 CR.) (5 CR.)
BEGINNING GERMAN I-II
 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. Does not fulfill the foreign language requirement for the Associate of Arts degree. Lecture 3 hours per week.

GER 111-112 (3 CR.) (3 CR.)
CONVERSATION IN GERMAN I-II
 Prerequisite is GER 102 or equivalent. Emphasizes the spoken language, stressing correctness of structure, pronunciation, fluency, and vocabulary. Lecture 3 hours per week.

GER 201-202 (3 CR.) (3 CR.)
INTERMEDIATE GERMAN I-II
 Prerequisite is GER 102 or equivalent. Continues to develop understanding, speaking, reading, and writing skills. German is used in the classroom. Lecture 3 hours per week.

GER 241 (3 CR.)
INTERMEDIATE GERMAN COMPOSITION I
 Prerequisite is GER 202 or equivalent. Develops skills and practice in written German. Lecture 3 hours per week.

GER 251 (3 CR.)
GERMAN CULTURE AND CIVILIZATION I
 Introduces the student to German thought, culture, and scientific achievement. Classes conducted in English. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

GREEK

GRE 101-102 (3 CR.) (3 CR.)
INTRODUCTION TO ANCIENT GREEK I-II
 Introduces 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 are GRE 101 102. 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 in the "Description of Courses" 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 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 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.

HLT 170 (1 CR.)
INTRODUCTION TO MASSAGE
 Introduces the student to the field of massage therapy. Student practices basic Swedish massage strokes, aromatherapy, effleurage, petissage and

friction, as well as indications and contra-indications for massage. Lecture 1 hour per week.

HLT 180 (3 CR.)
THERAPEUTIC MASSAGE I
 Prerequisite 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.

HLT 220 (3 CR.)
CONCEPTS OF DISEASE
 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.

HLT 250 (3 CR.)
GENERAL PHARMACOLOGY
 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.

HLT 280 (3 CR.)
THERAPEUTIC MASSAGE II
 Prerequisite is 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 health care fields. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

HLT 281 (3 CR.)
THERAPEUTIC MASSAGE III
 Prerequisites are 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 in the “Description of Courses” section.

HEALTH INFORMATION MANAGEMENT

HIM 100 (1 CR.) **INTRODUCTION TO THE HEALTH CARE DELIVERY SYSTEM**

Introduces the organization of the health care delivery system with emphasis on types of providers and the role that accrediting and licensing bodies play in the delivery of health care. Lecture 1 hour per week.

HIM 110 (3 CR.) **INTRODUCTION TO HUMAN PATHOLOGY**

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 40 words per minute. Develops skills in the transcription of various medical record reports, use of transcription references and proof reading 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 Medical Transcription I. Develops skills in the transcription of various medical record reports, use of transcription references and proof reading 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**

Prerequisite: Students must be able to read and write at a college level, have a willingness to learn, and a solid understanding of personal computer applications. Teaches basic concepts of microcomputer software

(to include operating systems, word processing, spreadsheets, and data base 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 health care professionals. Lecture 3 hours per week.

HIM 141-142 (3 CR.) (3 CR.) **FUNDAMENTALS OF HEALTH INFORMATION SYSTEMS I-II**

Prerequisite is ITE 115 or permission of instructor. 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 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 US 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 are 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 (2 CR.) **HEALTH STATISTICS**

Prerequisite is HIM 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 are 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**

Prerequisite is HIM 141 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**

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 HEALTH CARE**

Explores computer technology and system application in health care. Introduces the information systems life cycle. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HIM 231–232 (3 CR.) (3 CR.)**HEALTH RECORD APPLICATIONS I-II**

Prerequisite is HIM 141 and co-requisites are HIM 142 and HIM 215. Uses an integrated approach to practicing health records skills in a clinical environment. Emphasizes the use of the microcomputer in accomplishing problem-solving tasks. Laboratory 6 hours per week.

HIM 233 (3 CR.)**ELECTRONIC HEALTH RECORDS MANAGEMENT**

Prerequisites: HIM 130, HIM 230 and program placement into the Health Information Management degree program or the Clinical Data Coding Career Studies Certificate or permission of the instructor. 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 setting. Discusses legal issues created by implementation of the EHR. Lecture 3 hours per week.

HIM 249 (3 CR.)**SUPERVISION AND MANAGEMENT PRACTICES FOR HIM**

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 are HIM 110 and HIM 111 plus either BIO 141-142 or NAS 150 or permission of instructor. 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**

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**

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**

Stresses advanced coding skills through practical exercises using actual medical records. Introduces CPT-4 coding system and guidelines for out-patient/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 are HIM 110 and HIM 111 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: All students should have a background in anatomy, physiology, and medical terminology. HIM 111, BIO 141 and BIO 142, NAS 150, NAS 161 and NAS 162 or permission of the instructor. 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.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

HINDI

**HIN 101 (5 CR.)
BEGINNING HINDI I**

Develops the understanding, speaking, reading, and writing of Hindi, and emphasizes the structure of the language. Lecture 5 hours per week.

**HIN 102 (5 CR.)
BEGINNING HINDI II**

Prerequisite: HIN 101. Continues with developing the understanding, speaking, reading, and writing of Hindi, and emphasizes the structure of the language. Lecture 5 hours per week.

**HIN 201 (3 CR.)
INTERMEDIATE HINDI I**

Prerequisite is HIN 102 or instructor approval. Continues the development of the skills of understanding, speaking, reading, and writing of Hindi. Classes are conducted in Hindi. Lecture 3 hours per week.

**HIN 202 (3 CR.)
INTERMEDIATE HINDI II**

Prerequisite: HIN 201. Utilizes the development of skills of understanding, speaking, reading, and writing of Hindi covered in HIN 201. Classes are conducted in Hindi. Lecture 3 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.)

HISTORY AND THEORY OF 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.

HIS 203–204 (3 CR.) (3 CR.)**HISTORY OF AFRICAN CIVILIZATION I–II**

Examines major social, economic, political and religious developments from earliest times to the present. Lecture 3 hours per week.

HIS 205 (3 CR.)**LOCAL HISTORY**

Studies the history of the local community and/or region. Lecture 3 hours per week.

HIS 211 (3 CR.)**HISTORY OF ENGLAND**

Surveys the history of the British Isles from pre-Celtic times to the present. Lecture 3 hours per week.

HIS 225–226 (3 CR.) (3 CR.)**TOPICS IN EUROPEAN HISTORY I–II**

Examines selected topics in the history of Europe from ancient times to the present. Lecture 3 hours per week.

HIS 231–232 (3 CR.) (3 CR.)**HISTORY OF LATIN AMERICAN CIVILIZATIONS I–II**

Examines Latin American civilizations from pre-Columbian origins to the present. Lecture 3 hours per week.

HIS 241–242 (3 CR.) (3 CR.)**HISTORY OF RUSSIA I–II**

Surveys history of Russia from earliest times to the present. Includes political, economic, multi-national, social, and cultural aspects of Russian and Soviet history. Lecture 3 hours per week.

HIS 243 (3 CR.)**HISTORY OF THE ANCIENT WORLD I**

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.

HIS 251–252 (3 CR.) (3 CR.)**HISTORY OF MIDDLE EAST CIVILIZATION I–II**

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.

HIS 253–254 (3 CR.) (3 CR.)**HISTORY OF ASIAN CIVILIZATIONS I–II**

Surveys the civilizations of Asia from their origins to the present. Lecture 3 hours per week.

HIS 255 (3 CR.)**HISTORY OF CHINESE CULTURE AND INSTITUTIONS**

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.

HIS 256 (3 CR.)**HISTORY OF JAPANESE CULTURE AND INSTITUTIONS**

Examines traditional Japanese social, political, economic, and military institutions. Also examines major literary, artistic and intellectual achievements from pre-historic times to the present. Lecture 3 hours per week.

HIS 261 (3 CR.)**TOPICS IN CULTURAL ETHNICITY I**

Cultural experiences of various ethnic groups in the United States, e.g. the Irish, Italians, Jews, Germans, etc. Lecture 3 hours per week.

HIS 262 (3 CR.)**UNITED STATES HISTORY IN FILM**

Examines selected topics in the United States history that shaped the American experience, presented in film. Lecture 3 hours per week.

HIS 266 (3 CR.)**MILITARY HISTORY OF THE CIVIL WAR**

Analyzes military campaigns of the Civil War, including factors contributing to the defeat of the Confederacy and problems created by the war. May include field trips to Civil War sites in the region. Lecture 3 hours per week.

HIS 267 (3 CR.)**THE SECOND WORLD WAR**

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.

HIS 268 (3 CR.)**THE AMERICAN CONSTITUTION**

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.

HIS 269 (3 CR.)**CIVIL WAR AND RECONSTRUCTION**

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.

HIS 276 (3 CR.)
UNITED STATES HISTORY SINCE WORLD WAR II
Investigates United States history from 1946 to the present, studying both domestic developments and American involvement in international affairs. Lecture 3 hours per week.

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 in the “Description of Courses” 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 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 is 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 is 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 is HRT 231. Co-requisite is 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

Prerequisites are 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 co-requisite is HRT 231, Planting Design I. It is also recommended but not required that the student take HRT 230, Site Analysis, 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 are HRT 231 and HRT 251. Pre- or co-requisite is 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 is 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.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" 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 (FORMERLY TRV 130) (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 (FORMERLY TRV 140) (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 is 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 165 (4 CR.)**HOTEL HOUSEKEEPING AND ENGINEERING MANAGEMENT**

Studies housekeeping and engineering departments of a hotel. Emphasizes organization, staffing, scheduling, staff development, cleaning materials and procedures, preventive maintenance, refurbishing, design, safety, and computer applications. Lecture 4 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 (FORMERLY TRV 235) (3 CR.)**PRINCIPLES OF MEETING PLANNING**

Prerequisite is 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 (FORMERLY TRV 238) (3 CR.)**EXHIBITION MANAGEMENT**

Prerequisite is 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 (FORMERLY TRV 240) (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 (FORMERLY TRV 245) (3 CR.)**MEETING AND EXHIBITION LAW AND ETHICS**

Prerequisite is 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 (FORMERLY TRV 255) (3 CR.)
MEETING AND EXHIBITION MARKETING
 Prerequisite is 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 is 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 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 in the "Description of Courses" 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 is 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.

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HUMANITIES**HUM 111–112 (3 CR.) (3 CR.)****GREAT BOOKS I–II**

Introduces selected great works of philosophy and literature, with emphasis on close analysis of the text. Lecture 3 hours per week.

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'S STUDIES**

Prerequisite is 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 211–212 (3 CR.) (3 CR.)**SURVEY OF AMERICAN CULTURE I–II**

Examines elements of our national culture as they evolved from the first European explorations through colonization and independence to the present day. 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 235 (3 CR.)
FILIPINO-AMERICAN CULTURE

Surveys the cultural history of Filipinos in the United States from early immigration until the present. Studies history, cultural values, social and economic life, music, dance, art and literature, including acculturation and assimilation. 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 256 (3 CR.)
MYTHOLOGY IN LITERATURE AND THE ARTS

Studies cultural expressions of mythology in literature and the arts. Considers several of the following mythologies, with emphasis on parallels and divergencies: Egyptian, Near-Eastern, Greek, Roman, Celtic, Norse, Asian, and African. 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.

HUM 260 (3 CR.)
SURVEY OF TWENTIETH-CENTURY CULTURE

Explores literature, visual arts, philosophy, music, and history of our time from an interdisciplinary perspective. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

**INFORMATION TECHNOLOGY
DATABASE & DESIGN**

ITD 110 (3 CR.)
WEB PAGE DESIGN I

Prerequisite is ITE 115 or ITE 131. Stresses a working knowledge of Web site 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 112 (3 CR.)

DESIGNING WEB PAGE GRAPHICS

Prerequisite is ITD 110. Explores the creation of digital graphics for Web design. Basic design elements such as color and layout will be explored using a computer graphics program(s). Lecture 3 hours per week.

ITD 132 (3 CR.)

STRUCTURED QUERY LANGUAGE

Prerequisite is 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 is 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 procedures, functions, triggers and packages. Lecture 3 hours per week.

ITD 150 (3 CR.)

ORACLE REPORTS

Prerequisite is ITD 132. Introduces basics of data analysis and reporting using Oracle Reports. Includes the building of a variety of standard and custom reports, running both in client-server and Web environments. Lecture 3 hours per week.

ITD 210 (3 CR.)

WEB PAGE DESIGN II

Prerequisite is ITD 110. Incorporates advanced techniques in Web site planning, design, usability, accessibility, advanced site management, and maintenance utilizing Web editor software(s). Lecture 3 hours per week.

ITD 212 (3 CR.)

INTERACTIVE WEB DESIGN

Prerequisite is ITD 110. Provides techniques in interactive design concepts to create cross-platform, low-bandwidth animations utilizing a vector-based application. Emphasizes the importance of usability, accessibility, optimization and performance. Lecture 3 hours per week.

ITD 250 (3 CR.)

DATABASE ARCHITECTURE AND ADMINISTRATION

Prerequisite is ITD 256. Involves in-depth instruction about the underlying architecture of databases and the handling of database administration. Lecture 3 hours per week.

ITD 252 (3 CR.)**DATABASE BACKUP AND RECOVERY**

Prerequisite is 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 is 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 is ITD 250. Emphasizes instruction to optimize the performance of a database management system. 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: Oracle or SQL programming including DDL, DML, transaction control & queries with SELECT statement and some exposure to procedural language programming. 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 102 (1 CR.)**COMPUTERS AND INFORMATION SYSTEMS**

Introduces terminology, concepts, and methods of using computers in information systems. Teaches computer literacy, not intended for Information Systems Technology majors. Lecture 1 hour per week.

ITE 105 (2 CR.)**CAREERS AND CYBER ETHICS**

Career paths in Information Technology will be explored to help the student determine the appropriate degree plan. Career paths will include but not be limited to software development, computer science, database, networking, system administration and operations, end user support, Web design, and management. The student will learn ethical concerns in business and information technology including the *ACM Code of Ethics*. Lecture 2 hours per week.

ITE 115 (3 CR.)**INTRODUCTION TO COMPUTER APPLICATIONS & 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 126 (1 CR.)**OPERATING SYSTEM FUNDAMENTALS**

Includes instruction in commonly used internal and external commands including the use of subdirectories and creating basic batch files. Lecture 1 hr. per week.

ITE 130 (3 CR.)**INTRODUCTION TO INTERNET SERVICES**

Prerequisite is working knowledge of Windows. Provides students with a working knowledge of Internet terminology and services including e-mail, WWW browsing, search engines, ftp, file compression, and other services using a variety of software packages. Provides instruction for basic Web page construction. Lecture 3 hours per week.

ITE 131 (1 CR.)**SURVEY OF INTERNET SERVICES**

Prerequisite is working knowledge of Windows. Introduces students to basic Internet terminology and services including e-mail, WWW browsing, search engines, ftp, telnet, and other services. Lecture 1 hour per week.

ITE 140 (3 CR.)**SPREADSHEET SOFTWARE I**

Prerequisite is ITE 115. 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

Prerequisite is ITE 115. 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 is 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 is 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 is 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 215 (3 CR.)

ADVANCED COMPUTER APPLICATIONS & INTEGRATION

Prerequisite is ITE 115. Incorporates advanced computer concepts including the integration of a software suite. Lecture 3 hours per week.

ITE 221 (3 CR.)

PC HARDWARE AND OS ARCHITECTURE

Prerequisite is ITE 115. 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 is 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 is ITN 100. 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. Course content also includes selected topics in network implementation, support and LAN/WAN connectivity. Lecture 3 hours per week.

ITN 106 (3 CR.)

MICROCOMPUTER OPERATING SYSTEMS

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.

ITN 107 (3 CR.)

PERSONAL COMPUTER HARDWARE AND TROUBLESHOOTING

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.

ITN 114 (3 CR.)

WINDOWS XP PROFESSIONAL

Prerequisite is ITN 101. Provides instruction in installation, configuration, administration, and troubleshooting of Windows XP Professional as a desktop operating system in a networked data communications environment. Lecture 3 hours per week.

ITN 115 (3 CR.)

WINDOWS 2003 SERVER (SER)

Prerequisite is ITN 101. Consists of instruction that teaches students how to manage and maintain a Microsoft Windows Server 2003 environment. Lecture 3 hours per week.

- ITN 116 (3 CR.)**
WINDOWS 2003 NETWORK INFRASTRUCTURE IMPLEMENTATION, MANAGEMENT, & MAINTENANCE (NI-IMM)
 Prerequisite is ITN 101. Provides instruction on how to implement, manage, and maintain a Microsoft Windows Server 2003 network infrastructure. Lecture 3 hours per week.
- ITN 117 (3 CR.)**
WINDOWS 2003 NETWORK INFRASTRUCTURE PLANNING & MAINTENANCE (NI-PIM)
 Prerequisite is ITN 101. Provides instruction on how to plan and maintain a Microsoft Windows Server 2003 network infrastructure. Lecture 3 hours per week.
- ITN 118 (3 CR.)**
WINDOWS 2003 ACTIVE DIRECTORY INFRASTRUCTURE PLANNING
 Prerequisite is ITN 101. Provides instruction on how to plan, implement, and maintain a Microsoft Windows Server 2003 Active Directory infrastructure. Lecture 3 hours per week.
- ITN 120 (3 CR.)**
WIRELESS: NETWORK ADMINISTRATION (W-NA)
 Prerequisite is ITN 100 and pre- or co-requisite is 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.
- ITN 125 (3 CR.)**
WIRELESS: MOBILE NETWORKING (W-MN)
 Prerequisite is ITN 100 and pre- or co-requisite is ITN 101. Presents an introduction to radio frequency, FHSS, and Bluetooth technology used in mobile networking solutions. Provides instruction in the scope, goals, specifications, applications and structure of Bluetooth technology and its applications and interrelationships with Wireless Local Area Networks (WLAN), Personal Area Networks (WPAN), HomeRF networks, wireless protocols, and data communications systems. Lecture 3 hours per week.
- ITN 126 (3 CR.)**
WIRELESS: NETWORK OPERATING SYSTEM (W-NOS)
 Prerequisite is ITN 100 and pre- or co-requisite is ITN 101. Concentrates on instruction in Windows-based network operating systems requirements including setup and installation procedures, maintenance and recovery, file/folder management, disk management, networking protocol, wireless services and utilities, and security management

systems in support of Wireless Local Area Networks. Lecture 3 hours per week.

- ITN 154 (4 CR.)**
NETWORKING FUNDAMENTALS: CISCO
 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.

- ITN 155 (4 CR.)**
INTRODUCTORY ROUTING: CISCO
 Prerequisite is 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.

- ITN 156 (4 CR.)**
BASIC SWITCHING AND ROUTING: CISCO
 Prerequisite is 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.

- ITN 157 (4 CR.)**
WAN TECHNOLOGIES: CISCO
 Prerequisite is 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.

- ITN 170 (3 CR.)**
LINUX SYSTEM ADMINISTRATION
 Prerequisite is ITN 171. 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.

- ITN 171 (3 CR.)**
UNIX I
 Prerequisite is 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.

- ITN 200 (3 CR.)**
ADMINISTRATION OF NETWORK RESOURCES
 Prerequisite is 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.

ITN 208 (4 CR.)

PROTOCOLS AND COMMUNICATIONS

Prerequisite is 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.

ITN 209 (3 CR.)

VOICE OVER INTERNET PROTOCOL

Discusses in depth the concept, theory and principles of Voice over Internet Protocol technology. Reviews the existing PSTN architecture. Examines VOIP Quality of Service, various speech coding techniques, the H.323 architecture, Session Initiation Protocol, Media Gateway Protocol and the relationship between VOIP and SS7. Lecture 3 hours per week.

ITN 220 (3 CR.)

WIRELESS: NETWORK SECURITY (W-NS)

Prerequisite is ITN 120. Provides instruction in designing and implementing security systems in a wireless windows network environment. Includes use of wireless, Internet, and windows-based protocols and management techniques in wireless security systems. Lecture 3 hours per week.

ITN 222 (3 CR.)

WIRELESS: NETWORK INTEROPERABILITY (WNI)

Provides instruction in combining wired and wireless networks. Includes development of wired and wireless network infrastructure to configure, implement, manage and integrate Ethernet, Internet, and wireless network systems. Lecture 3 hours per week.

ITN 241 (3 CR.)

WINDOWS 2003 SECURITY DESIGN (SD)

Prerequisite is ITN 115. Provides instruction that shows students how to gather and analyze business requirements for a secure network infrastructure and design a security solution that meets those requirements. Lecture 3 hours per week.

ITN 243 (3 CR.)

WINDOWS 2003 SECURITY IMPLEMENTATION AND ADMINISTRATION (S-IA)

Prerequisite is ITN 115. Consists of instruction on how to implement, manage, maintain, and troubleshoot security in a Windows Server 2003 network infrastructure and also plan and configure a Windows Server 2003 PKI. Lecture 3 hours per week.

ITN 245 (3 CR.)

NETWORK TROUBLESHOOTING

Prerequisite is 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 250 (4 CR.)

ADVANCED ROUTING: CISCO

Prerequisite is ITN 157. Includes instruction focusing on the characteristics of various Routing Protocols used in the TCP/IP networking environment, static routing, OSPF, IGRP, EIGRP, BGP, advanced IP addressing, and security. Examines various strategies for optimizing network routing performance. Lecture 4 hours per week.

ITN 251 (4 CR.)

REMOTE ACCESS NETWORKING: CISCO

Prerequisite is ITN 250. Focuses on in-depth instruction to a variety of wide area networking technologies and their implementation. Includes POTS and analog network connectivity, ISDN (both BRI and PRI), PPP, Cisco, AAA Security System, and Frame Relay. Lecture 4 hours per week.

ITN 252 (4 CR.)

ADVANCED SWITCHING: CISCO

Prerequisite is ITN 251. Provides in-depth instruction in switching as a core technology in today's networking environment. Includes VLANs, trunking protocols, spanning-tree protocol, HSRP, and multi-layer switching. Lecture 4 hours per week.

ITN 253 (4 CR.)

NETWORK TROUBLESHOOTING: CISCO

Prerequisite is ITN 252. Centers on instruction in troubleshooting tools and techniques appropriate to the network communications environment. Includes workstation troubleshooting software, communication equipment troubleshooting options, and typical problems related to Switching, WAN, and routing technologies. Lecture 4 hours per week.

ITN 260 (3 CR.)

NETWORK SECURITY BASICS

Prerequisite is ITE 115 or instructor's permission. 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 is ITN 208 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 is ITN 208 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 eCOMMERCE SECURITY**

Prerequisite is ITN 208 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 is ITN 100 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

Prerequisite is ITE 115 or instructor's permission. 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 is 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 271 (3 CR.)
UNIX II

Prerequisite is ITN 171. Concentrates on instruction in advanced topics in Unix. Lecture 3 hours per week.

ITN 276 (3 CR.)
COMPUTER FORENSICS I

Prerequisites are ITN 106 and ITN 107. Co-requisite is 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 is 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.

ITN 283 (3 CR.)
**WIRELESS NETWORK FIELD
 SITE SURVEY (W-NFSS)**

Involves instruction on how to survey, design, configures, and implement field wireless networking solutions using wireless products. Covers learn radio frequency theory, WLAN fundamentals, Visual and Radio Frequency Site Surveys, antenna systems, standards and regulations, network security features and troubleshooting in a wireless networking environment. Lecture 3 hours per week.

**INFORMATION
 TECHNOLOGY PROGRAMMING**

ITP 100 (3 CR.)
SOFTWARE DESIGN

Pre or co-requisite is MTH 151 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 is ITP 100 and working knowledge of Windows. 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 is 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 is 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 is 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 134 (4 CR.)
VISUAL C++ PROGRAMMING I
Prerequisites are ITP 100 and a working knowledge of Windows. Presents fundamentals of object-oriented programming and design using C++ for GUI applications. Emphasizes software design and construction using the concepts of foundation classes. Lecture 4 hours per week.

ITP 136 (4 CR.)
C# PROGRAMMING I
Prerequisite is 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 140 (4 CR.)
CLIENT SIDE SCRIPTING
Prerequisites are ITP 100 and ITD 110. Provides instruction in fundamentals of Internet application design, development, and deployment using client side scripting language(s). Lecture 4 hours per week.

ITP 165 (4 CR.)
GAMING AND SIMULATION
Prerequisite: permission of instructor. 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. Total 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 212 (4 CR.)
VISUAL BASIC.NET II
Prerequisite is ITP 112. Teaches application of advanced object-oriented techniques to application development. Course emphasizes database connectivity, advanced controls, Web forms, and Web services using Visual Basic.NET. Lecture 4 hours per week.

ITP 220 (4 CR.)
JAVA PROGRAMMING II
Prerequisite is ITP 120. Instruction in the 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: ITD 110, ITP 100. 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 Web sites. 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 230 (4 CR.)
C PROGRAMMING II
Prerequisite is 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 232 (4 CR.)
C++ PROGRAMMING II
Prerequisite is ITP 132. Teaches advanced object-oriented techniques for data structures using C++. Lecture 4 hours per week.

ITP 234 (4 CR.)
VISUAL C++ PROGRAMMING II
Prerequisite is 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 is 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 240 (4 CR.)**SERVER-SIDE PROGRAMMING**

Prerequisite is ITP 140. Instruction in fundamentals of Internet application design, development, and deployment. Course content includes implementation of server component models, security, and database connectivity using server-side programming. Lecture 4 hours per week.

ITP 244 (4 CR.)**ASP.NET: SERVER-SIDE PROGRAMMING**

Prerequisite is ITP 112 or ITP 136. Provides instruction in creation of ASP.NET Web applications to deliver dynamic content to a Web site 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 is 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 248 (4 CR.)**eCOMMERCE INTEGRATION AND APPLICATIONS**

Prerequisite is ITP 246. Includes instruction in the implementation of platform-independent e-commerce Web applications. Emphasizes building end-to-end e-commerce skills including comparison and selection of commerce architecture, installation and configuration, security considerations, and the development of a complete business-to-consumer and a business-to-business site. Lecture 4 hours per week.

ITP 251 (3 CR.)**SYSTEMS ANALYSIS AND DESIGN**

Prerequisite is 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 260 (4 CR.)**APPLICATIONS OF MODELING AND SIMULATION**

Prerequisite: permission of instructor. Expands understanding of modeling and simulation via the implementation of a capstone project. Continues to develop object oriented programming skills. Expands three dimensional visualization skills. Examines all aspects of the project lifecycle. Develops workplace readiness for the modeling and simulation industry. Lecture 4 hours. Total 4 hours per week.

ITP 265 (4 CR.)**CONCEPTS OF SIMULATION**

Prerequisite: permission of instructor. 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.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" 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 is 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 is 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 is 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 is 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 is 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 are IDS 105, IDS 106, and IDS 205 & 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 are 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 is 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**

Prerequisite is 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 in the "Description of Courses" section.

INTERPRETER EDUCATION

Additional sign language courses are listed under AMERICAN SIGN LANGUAGE.

**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. 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 233 (3 CR.)
ASL-TO-ENGLISH INTERPRETATION II
 Prerequisites: INT 133 & 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 & 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 & 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 250 (3 CR.)
DIALOGIC INTERPRETATION I
 Prerequisite: INT 233 & 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 in the “Description of Courses” section.

ITALIAN

ITA 101–102 (5 CR.) (5 CR.)
BEGINNING ITALIAN I–II
 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
 Teaches oral communication and introduces the student to cultural mores and customs. Recommended for students with no prior instruction in the language. Does not fulfill the foreign language requirement for the Associate of Arts degree. Lecture 3 hours per week.

ITA 111 (3 CR.)
CONVERSATION IN ITALIAN I
 Prerequisite is ITA 102 or equivalent. Emphasizes the spoken language, stressing fluency and correctness of structure, pronunciation, and vocabulary. Introduces the student to cultural mores and customs. Lecture 3 hours per week.

ITA 201-202 (3 CR.) (3 CR.)

INTERMEDIATE ITALIAN I-II

Prerequisite is ITA 102 or equivalent. 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 in the "Description of Courses" section.

JAPANESE

JPN 101-102 (5 CR.) (5 CR.)

BEGINNING JAPANESE I-II

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 is 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 is JPN 102. 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 in the "Description of Courses" section.

KOREAN

KOR 101-102 (5 CR.) (5 CR.)

BEGINNING KOREAN I-II

KOR 101 is a prerequisite for KOR 102. 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

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 are two years high school Latin or one year college Latin. Introduces the reading of classical Latin with a review of Latin grammar, forms, and syntax. Lecture 3 hours per week.

LEGAL/PARALEGAL STUDIES

LGL 110 (3 CR.)

INTRODUCTION TO LAW AND THE LEGAL ASSISTANT

Introduces various areas of law in which a legal 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. Focuses on separation and pre nuptial agreements, pleadings, and rules of procedure. 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, Shepard's Citations, ALR, and other research tools. Includes 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 215 (3 CR.)

TORTS

Studies fundamental principles of the law of torts. May include preparation and use of pleadings and other documents involved in the trial of a civil action. Emphasizes personal injury, products liability, and medical malpractice cases. Lecture 3 hours per week.

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 ABC Commission, State Corporation Commission, Division of Workers' Compensation, Social Security Administration, the Virginia Employment Commission and other administrative agencies. Lecture 3 hours per week.

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 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 in the "Description of Courses" 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. Total 1 hour per week.

LBR 110 (1 CR.)**EFFECTIVE INTERNET SEARCHING**

Prerequisite is 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 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 ECOMMERCE

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 283 (3 CR.)

ETHICAL, LEGAL, AND PRIVACY ISSUES IN eCOMMERCE

Examines major issues of eCommerce which include privacy protection, concerns about censorship, protection of intellectual property and copyright issues, fraud prevention, along with the local, national and international legal framework within which marketing strategies are executed. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

MATHEMATICS

A placement test is required for MTH 3 through 7, 60, 115, 120, 126, 150, 151, 152, 157, 163, 166, 173, 181, 213, 241, and 271.

MTH 1 (3-5 CR.)

DEVELOPMENTAL MATHEMATICS

Designed to bridge the gap between a weak mathematical foundation and the knowledge necessary for the study of mathematics courses in technical, professional, and transfer programs. Topics may include arithmetic, algebra, geometry, and trigonometry. Students may re-register for this course in subsequent semesters as necessary until the course objectives are completed. Credits not applicable toward graduation. Variable hours per week.

MTH 2 (3 CR.)

ARITHMETIC

Covers arithmetic principles and computations including whole numbers, fractions, decimals, percents, measurement, graph interpretation, geometric forms, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Lecture 3 hours per week.

MTH 3 (4 CR.)**ALGEBRA I**

Prerequisites are a satisfactory score on an appropriate proficiency examination and Arithmetic or equivalent. Covers the topics of Algebra I including real numbers, equations and inequalities, exponents, polynomials, Cartesian coordinate system, rational expressions, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Lecture 4 hours per week.

MTH 4 (4 CR.)**ALGEBRA II**

Prerequisites are a satisfactory score on an appropriate proficiency examination and Algebra I or equivalent. Expands upon the topics of Algebra I including rational expressions, radicals and exponents, quadratic equations, systems of equations, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Lecture 4 hours per week.

MTH 6 (2 CR.)**DEVELOPMENTAL GEOMETRY**

Prerequisites are a satisfactory score on an appropriate proficiency examination and Algebra I or equivalent. Covers topics in Euclidean geometry including similarity and congruency, plane and solid figures, right triangles, parallel and perpendicular lines, constructions, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Lecture 2 hours per week.

MTH 7 (2 CR.)**DEVELOPMENTAL TRIGONOMETRY**

Prerequisites are a satisfactory score on an appropriate proficiency examination and Algebra II and Geometry, or equivalent of these two courses. Covers topics including right triangles, oblique triangles, identities, graphs, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Lecture 2 hours per week.

MTH 60 (3 CR.)**INTRODUCTION TO COLLEGE ALGEBRA**

Prerequisites are a satisfactory score on an appropriate proficiency examination and Algebra II or equivalent. Reviews the fundamental ideas of algebra including the real number system, polynomials, rational expressions, graphing, equations and inequalities, relations and functions, and systems of first degree equations and inequalities. (This course is intended as preparation for MTH 163 or MTH 166.) Lecture 3 hours per week.

MTH 103–104 (3 CR.) (3 CR.)**APPLIED TECHNICAL MATHEMATICS I–II**

Prerequisites are a satisfactory score on an appropriate proficiency examination and one unit of high school mathematics or equivalent. Presents a review of arithmetic, elements of algebra, geometry, and trigonometry. Directs applications to specialty areas. Lecture 3 hours per week.

MTH 115–116 (3 CR.) (3 CR.)**TECHNICAL MATHEMATICS I–II**

Prerequisites are a satisfactory score on an appropriate mathematics proficiency examination, Algebra II and Geometry, or the equivalent of these two courses. Prerequisite to MTH 116 is MTH 115. Designed for the technical student. Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry, and complex numbers. Lecture 3 hours per week.

MTH 120 (3 CR.)**INTRODUCTION TO MATHEMATICS**

Prerequisite is a satisfactory score on an appropriate proficiency examination covering basic arithmetic skills. MTH 3 or equivalent is desirable. Covers number systems, logic, basic algebra, systems of equations, basic geometry, and descriptive statistics. Lecture 3 hours per week. MTH 120 cannot be used toward a degree.

MTH 126 (2 CR.)**MATHEMATICS FOR ALLIED HEALTH**

Prerequisites are a satisfactory score on an appropriate proficiency examination and one unit of high school mathematics. Presents scientific notation, precision and accuracy, decimals and percents, ratio and proportion, variation, simple equations, techniques of graphing, use of charts and tables, logarithms, and the metric system. Lecture 2 hours per week.

MTH 150 (3 CR.)**TOPICS IN GEOMETRY**

Prerequisites: a placement recommendation for MTH 150 and Algebra I, Algebra II and Geometry or equivalent. Presents the fundamentals of plane and solid geometry and introduces non-Euclidean geometries and current topics. Lecture 3 hours per week.

MTH 151 (3 CR.)**MATHEMATICS FOR THE LIBERAL ARTS I**

Prerequisites are a satisfactory score on an appropriate proficiency examination and Algebra II and Geometry, or the equivalent of these two courses. Presents topics in sets, logic, numeration systems, geometric systems, and elementary computer concepts. Lecture 3 hours per week.

MTH 152 (3 CR.)**MATHEMATICS FOR THE LIBERAL ARTS II**

Prerequisites are a satisfactory score on an appropriate proficiency examination, and Algebra II and Geometry, or the equivalent of these two courses. Presents topics in functions, combinatorics, probability, statistics, and algebraic systems. Lecture 3 hours per week.

MTH 157 (4 CR.)**ELEMENTARY STATISTICS**

Prerequisites are a satisfactory score on an appropriate proficiency examination, and Algebra II and Geometry, or the equivalent of these two courses. Presents elementary statistical methods and concepts, including descriptive statistics, estimation, hypothesis testing, linear regression, and categorical data analysis. (Credit will not be awarded for both MTH 157 and MTH 241.) Lecture 4 hours per week.

MTH 163 (3 CR.)**PRECALCULUS I**

Prerequisites are a satisfactory score on an appropriate proficiency examination and Algebra II and Geometry, or the equivalent of these two courses. Presents college algebra, matrices, and algebraic, exponential, and logarithmic functions. (Credit cannot be awarded for both MTH 163 and MTH 166.) Lecture 3 hours per week.

MTH 164 (3 CR.)**PRECALCULUS II**

Prerequisite is MTH 163. Presents trigonometry, analytic geometry, and sequences and series. (Credit cannot be awarded for both MTH 164 and MTH 166.) Lecture 3 hours per week.

MTH 166 (5 CR.)**PRECALCULUS WITH TRIGONOMETRY**

Prerequisites are a satisfactory score on an appropriate proficiency examination and Algebra II and Geometry, or the equivalent of these two courses. Presents college algebra, analytic geometry, trigonometry, and algebraic, exponential, and logarithmic functions. (Credit cannot be awarded for both MTH 163 and MTH 166.) Lecture 5 hours per week.

MTH 173 (5 CR.)**CALCULUS WITH ANALYTIC GEOMETRY I**

Prerequisites are (1) satisfactory score on an appropriate proficiency examination and (2) MTH 166 or MTH 164 or two units of algebra, one unit of geometry, and one-half unit each of trigonometry and precalculus. Presents analytic geometry and the calculus of algebraic and transcendental functions including the study of limits, derivatives, differentials, and an introduction to integration along with their applications. Designed for mathematical, physical, and engineering science programs. Lecture 5 hours per week.

MTH 174 (5 CR.)**CALCULUS WITH ANALYTIC GEOMETRY II**

Prerequisite is MTH 173 or equivalent. Continues the study of analytic geometry and the 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. Designed for mathematical, physical, and engineering science programs. Lecture 5 hours per week.

MTH 178 (2 CR.)**TOPICS IN ANALYTIC GEOMETRY**

Prerequisite is MTH 173. Co-requisite is MTH 174. Covers conic sections, polar and parametric graphing. Designed for mathematical, physical, and engineering science programs. Lecture 2 hours per week.

MTH 181 (3 CR.)**FINITE MATHEMATICS I**

Prerequisites are a satisfactory score on an appropriate proficiency examination and Algebra II and Geometry, or the equivalent of these two courses. Introduces set theory, systems of linear equations, matrices, linear programming, probability, and game theory. Lecture 3 hours per week.

MTH 182 (3 CR.)**FINITE MATHEMATICS II**

Prerequisite is MTH 181 or equivalent. Introduces logic, counting techniques, probability and statistics, and mathematics of finance. Lecture 3 hours per week.

MTH 200 (3 CR.)**ABSTRACT ALGEBRA**

Prerequisite: MTH 174 or permission of instructor. Topics covered include groups, rings, integral domains, fields, isomorphisms and homomorphisms. Designed to fulfill the abstract algebra requirement for the Virginia high school mathematics teaching endorsement. Lecture 3 hours per week.

MTH 213 (3 CR.)**ADVANCED ENGINEERING TECHNICAL MATHEMATICS I**

Prerequisite for MTH 213 is MTH 116, 166 or equivalent. Applies differential and integral calculus to the appropriate technical field. Lecture 3 hours per week.

MTH 241 (3 CR.)**STATISTICS I**

Prerequisites are a satisfactory score on an appropriate proficiency examination and MTH 152 or MTH 163 or MTH 182 or permission of the division. Covers descriptive statistics, elementary probability, probability distributions, estimation, and hypothesis testing. Lecture 3 hours per week.

MTH 242 (3 CR.)**STATISTICS II**

Prerequisite is MTH 241 or equivalent. Continues the study of estimation and hypothesis testing with emphasis on correlation and regression, analysis of variance, Chi-squared tests, and nonparametric methods. Lecture 3 hours per week.

MTH 243 (3 CR.)**PROBABILITY AND STATISTICS I**

Prerequisite is MTH 174 or equivalent. Co-requisite is MTH 277. Uses calculus to develop the theory of probability and statistics including discrete and continuous distribution theory, Poisson processes, moment generating functions, central limit theorem, hypothesis testing, and estimation. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 244 (3 CR.)**PROBABILITY AND STATISTICS II**

Prerequisites are MTH 243 and MTH 285 or equivalent. Uses calculus, computer packages, and matrix methods to develop the theory of simple and multiple regression using matrices, analysis of variance, nonparametric, and Chi-squared procedures. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 250 (3 CR.)**COLLEGE GEOMETRY**

Prerequisite is MTH 174 or division approval. Presents topics in Euclidean and non-Euclidean geometries chosen to prepare individuals for teaching geometry at the high school level. Studies Euclid's geometry and its limitations, axiomatic systems, techniques of proof, and Hilbert's geometry, including the parallel postulates for Euclidean, hyperbolic, and elliptic geometries. Lecture 3 hours per week.

MTH 271 (3 CR.)**APPLIED CALCULUS I**

Prerequisites are (1) satisfactory score on an appropriate proficiency examination and (2) MTH 163 or MTH 166 or two units of algebra, one unit of geometry, and one-half unit of precalculus. Presents limits, continuity, differentiation of algebraic and transcendental functions with applications, and an introduction to integration. Lecture 3 hours per week.

MTH 272 (3 CR.)**APPLIED CALCULUS II**

Prerequisite is MTH 271 or equivalent. Covers techniques of integration, multivariable calculus, and an introduction to differential equations. Lecture 3 hours per week.

MTH 277 (4 CR.)**VECTOR CALCULUS**

Prerequisite is MTH 174 or equivalent. Presents vector valued functions, partial derivatives, multiple

integrals, and topics from the calculus of vectors.

Designed for mathematical, physical, and engineering science programs. Lecture 4 hours per week.

MTH 285 (3 CR.)**LINEAR ALGEBRA**

Prerequisite is MTH 174. Covers matrices, vector spaces, determinants, solutions to systems of linear equations, basis and dimension, eigen values, and eigen vectors. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 286 (4 CR.)**DISCRETE MATHEMATICS**

Prerequisite is MTH 174 or equivalent. Presents topics in discrete mathematical structures which are basic tools used in computer science. Covers sets, Boolean algebra, counting methods, generating functions and recurrence relations, graph theory, trees, and an introduction to finite state automata. Designed for mathematical, physical, and engineering science programs. Lecture 4 hours per week.

MTH 291 (3 CR.)**DIFFERENTIAL EQUATIONS**

Prerequisite is MTH 174 or equivalent. Introduces first order differential equations, linear differential equations, numerical methods, and applications. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 292 (3 CR.)**TOPICS IN DIFFERENTIAL EQUATIONS**

Prerequisite is MTH 291 or equivalent. Presents power series solutions, Fourier Series, Laplace Transforms, partial differential equations, and boundary value problems. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" 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 is 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 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 are 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 255 (3 CR.)

THERMODYNAMICS

Co-requisite is MEC 295, Topics in Thermodynamics. 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 is MTH 166 or instructor's permission. Studies properties of fluids and fluid flow, Bernouli's theorem, measuring devices, viscosity, and dimensional analysis. Emphasizes pumps, piping, and fluid motors. Lecture 3 hours per week.

MEC 295 (1 CR.)

TOPICS IN THERMODYNAMICS

Prerequisite is MTH 115. Co-requisite is 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 in the "Description of Courses" section.

MEDICAL LABORATORY

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 health care 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 health care 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 108 (2 CR.)

HUMAN PATHOGENIC CONCEPTS IN HEALTH

Introduces students to the classification and disease processes of important human pathogens. Emphasizes medical aseptic techniques and universal precautions. Covers specimen collection and transport. Lecture 2 hours per week.

MDL 110 (2 CR.)

URINALYSIS AND BODY FLUIDS

Studies the gross, chemical, and microscopic techniques used in the clinical laboratory. Emphasizes study of clinical specimens which include the urine, feces, cerebrospinal fluid, blood, and body exudates. Introduces specimen collection and preparation. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 120 (4 CR.)

PRINCIPLES OF HEMATOLOGY

Presents theory of procedures performed in hematology and coagulation and the relationship of these procedures to the diagnosis of disease. Includes performance of manual hematology procedure and coagulation. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

MDL 155 (3 CR.)
INTEGRATED SCIENCES
FOR MEDICAL LABORATORY TECHNOLOGY

Integrates the basic mathematical, chemical and physical concepts necessary to the practice of laboratory medicine. Includes practice in specimen collection and processing. Lecture 2 hours. Laboratory 3 hours. Total 5 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 251–252 (3 CR.) (2 CR.)
CLINICAL MICROBIOLOGY I–II

Teaches handling, isolation, and identification of pathogenic microorganisms. Emphasizes clinical techniques of bacteriology, mycology, parasitology and virology. For MDL 251: Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. For MDL 252: Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

MDL 261 (4 CR.)
CLINICAL CHEMISTRY AND INSTRUMENTATION I

Introduces methods of performing biochemical analysis of clinical specimens. Teaches instrumentation involved in a clinical chemistry laboratory, quality control, and the ability to recognize technical problems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

MDL 265 (2 CR.)
ADVANCED CLINICAL CHEMISTRY

Presents principles of current special chemistry techniques. Lecture 2 hours per week.

MDL 266 (4 CR.)
CLINICAL CHEMISTRY TECHNIQUES

Includes performing of clinical chemistry methodologies and operation of typical instrumentation in a clinical laboratory. Clinical 12 hours per week.

MDL 276 (4 CR.)
CLINICAL HEMATOLOGY TECHNIQUES

Stresses performing hematological and coagulation methods and operation of typical instrumentation in a clinical laboratory. Clinical 12 hours per week.

MDL 277 (4 CR.)
CLINICAL IMMUNOHEMATOLOGY
AND IMMUNOLOGY TECHNIQUE

Deals with performing techniques, procedures, and interpretations in Blood Banking and Serology in a clinical laboratory. 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 in the “Description of Courses” section.

MILITARY SCIENCE

MSC 111–112 (1 CR.) (1 CR.)
MILITARY SCIENCE I–II

Covers the first year of general military science: organization of the army and ROTC, U.S. Army and national security, individual weapons, marksmanship, and leadership laboratory. Courses offered only in cooperation with four-year colleges authorized to offer Army ROTC programs. Lecture 1 hour per week.

MSC 211–212 (2 CR.)
MILITARY SCIENCE III–IV

Focuses on the second year of general military science: American military history, introduction to operations and basic tactics, map and aerial photo reading, and leadership laboratory. Courses offered only in cooperation with four-year colleges authorized to offer Army ROTC programs. Lecture 2 hours per week.

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 is 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 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.

MUS 137 (1-2 CR.)

CHORUS ENSEMBLE**

Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Divisional 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. Divisional approval required. May be repeated for credit. Laboratory 6 hours per week.

MUS 140 (3 CR.)

INTRODUCTION TO RECORDING TECHNIQUES

Introduces the theory and practice of basic magnetic and multichannel recording. Presents the concepts of recording electronics, equipment nomenclature, function, application, and interface, microphone application, and mixdown techniques. Provides basic hands on experience in the recording studio. 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 145 (1-2 CR.)

APPLIED MUSIC: KEYBOARD *

Teaches piano, organ, harpsichord, or synthesizer. Studies the standard repertoire. One to two half hour lessons per week; 4-8 hours practice required.

MUS 148 (1-2 CR.)

ORCHESTRA ENSEMBLE **

Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Divisional 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. Divisional 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. One to two half hour lessons per week; 4-8 hours practice required.

MUS 157 (3 CR.)

SOUND STUDIO DESIGN

Prerequisite is 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 position as 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 is 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 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. One to two half hour lessons per week, 4–8 hours practice 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. One to two half hour lessons per week, 4–8 hours practice required.
- MUS 179** (1 CR.)
MUSIC COPYRIGHT LAW
 Prerequisite is 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. One to two half hour lessons per week, 4–8 hours practice required.

MUS 211–212 (4 CR.) (4 CR.)

ADVANCED MUSIC THEORY I–II

Prerequisites are 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 is division approval. Requires the writing of short compositions in several styles, ranging from the 18th to the 20th 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 221–222 (3 CR.) (3 CR.)

HISTORY OF MUSIC I–II

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 is division approval. Introduces the theory and practice of electronic mechanical 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 is MUS 140 or division approval. Introduces advanced recording techniques that lead to master release and demonstration tapes. Provides knowledge and skills in refined areas of multi channel recording and mixdown techniques. Includes study of the process that converts finished master tapes to phonograph discs or prerecorded cartridges suitable for retail release. Provides experience in solving on site recording problems. 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 ½ hour for 1 hour credit and 1 hour for 2 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; 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. Divisional 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. Divisional approval required. May be repeated for credit. Continues MUS 138. Laboratory 6 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 ½ hour for 1 hour credit and 1 hour for 2 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; 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. Divisional 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. Divisional 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 ½ hour for 1 hour credit and 1 hour for 2 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; 4-8 hours practice required per week.

MUS 259 (3 CR.)

ADVANCED IMPROVISATIONAL TECHNIQUES

Prerequisite is 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 ½ hour for 1 hour credit and 1 hour for 2 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; 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 ½ hour for 1 hour credit and 1 hour for 2 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; 4-8 hours practice required 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 ½ hour for 1 hour credit and 1 hour for 2 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; 4–8 hours practice required 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 one credit and 6 hours per week for two credits.

Please contact the appropriate division for the availability of general usage courses as described in the “Description of Courses” 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 non-science majors.) Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

NAS 125 (4 CR.)**METEOROLOGY**

Presents a non-technical 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 (4 CR.)**ELEMENTS OF ASTRONOMY**

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**

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: BIO 101 or NAS 150 or permission of instructor. 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 in the “Description of Courses” section.

NURSING**NUR 111 (8 CR.)****FIRST LEVEL NURSING I**

Co-requisites: HLT 141, PSY 201, NUR 150.

Introduces nursing principles including concepts of health and wellness and the nursing process. Develops nursing skills to meet the biopsychosocial needs of individuals across the lifespan. Includes math computational skills, basic computer instruction related to the delivery of nursing care, communication skills, introduction to nursing, health, the health care system, legal aspects of nursing care, diagnostic testing, assessment, teaching and learning, asepsis, body mechanics and safety, personal care, activity/rest, wound care, nutrition, elimination, oxygenation, fluid and electrolytes, pain control, medication administration, aging populations and pre/post operative care. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 5 hours. Laboratory 9 hours. Total 14 hours per week.

NUR 115 (4 CR.)**LPN TRANSITION**

Introduces the role of the registered nurse through concepts and skill development in the discipline of professional nursing. This course serves as a bridge course for licensed practical nurses and is based upon individualized articulation agreements, mobility exams, or other assessment criteria as they relate to local programs and service areas. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

NUR 116 (1–2 CR.)**SELECTED NURSING CONCEPTS**

Introduces selected basic skills and concepts in the discipline of nursing and their incorporation into care

to meet the changing standards of nursing practice. Intended as a transition/refresher course for transfer and returning students. The one credit course is designed for the LPN transition to RN. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week. The two credit course is designed for transfer students from other nursing programs or returning students. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

NUR 125 (3 CR.)

HISTORICAL PERSPECTIVES OF NURSING

Prerequisite: Placement into ENG 111. Examines the cultural, eco-political and global development of professional nursing from ancient times to present day as an historical retrospective. Lecture 3 hours per week.

NUR 135 (2 CR.)

DRUG DOSAGE CALCULATIONS

Teaches apothecary, metric, household conversion; reading of drug orders and labels. Provides a practical approach to learning to calculate and prepare medications and solutions. Includes calculating intravenous flow rates and pediatric dosages. Lecture 2 hours per week.

NUR 150 (3 CR.)

**COMMUNITY-BASED NURSING
IN A MULTICULTURAL ENVIRONMENT**

Must be taken with NUR 111. Incorporates culture, family and the community as a broad focus of health promotion and disease prevention. Includes interventions directed at the total population or at individuals, families and groups in a multicultural society. Lecture 3 hours per week.

NUR 180 (4 CR.)

ESSENTIALS OF MATERNAL/NEWBORN NURSING

Prerequisites: NUR 111. Co-requisites: NUR 150, NUR 201, PSY 202. Utilizes the concepts of the nursing process in caring for families in the antepartum, intrapartum, and postpartum periods. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

NUR 201 (4 CR.)

PSYCHIATRIC NURSING

Prerequisites: NUR 111, SDV 101. Co-requisites: NUR 150, NUR 180, PSY 202. Focuses on the care of individuals/families requiring clinical treatment. Uses all components of the nursing process with increasing degrees of skill. Includes math computational skills and basic computer instruction related to the delivery of nursing care, alterations in behavior, eating disorders, mood disorders, anxiety,

chemical dependency and dementias. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

NUR 221 (9 CR.)

**SECOND LEVEL NURSING
PRINCIPLES AND CONCEPTS I**

Prerequisites are NUR 111, NUR 150, NUR 180, NUR 201, HLT 141, HLT 250, PSY 201-202. Co-requisites are CST elective, humanities elective, NUR 254 and 255. Focuses on nursing care of individuals, families, and/or groups with multidimensional needs in a variety of settings. Uses all components of the nursing process with increasing degrees of skill. Includes math computational skills, basic computer instruction related to the delivery of nursing care and nursing care related to infectious, immunological, oncological, hematological, gastrointestinal, vascular, sensory, genitourinary musculoskeletal, regulatory, endocrine, and women's health disorders and pre/intra/post-operative care. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 4 hours. Laboratory 15 hours. Total 19 hours per week.

NUR 222 (9 CR.)

**SECOND LEVEL NURSING
PRINCIPLES AND CONCEPTS II**

Prerequisite is NUR 221. Focuses on nursing care of individuals, families, and/or groups with multidimensional needs in a variety of settings. Uses all components of the nursing process with increasing degrees of skill. Includes math computation skills, basic computer instruction related to the delivery of nursing care and nursing care related to cardiac, respiratory, neurological disorders; emergency care, and leadership principles. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 4 hours. Laboratory 15 hours. Total 19 hours per week.

NUR 250 (5 CR.)

GLOBAL AND RURAL HEALTH NURSING

Prerequisite: NUR 150 and a current U.S. passport. Co-requisite: CST 229 Intercultural Communication. Applies principles and concepts of Transcultural Nursing in relationship to health promotion and disease prevention in global vulnerable populations. Provides an international/rural public health experience, allowing the student to apply concepts of epidemiology, environmental and public health. Students will travel to rural areas in underserved areas outside or inside of the continental United States. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

NUR 254 (1 CR.)**NURSING DIMENSIONS**

Prerequisites are: NUR 111, NUR 180, and NUR 201. Explores the role of the professional nurse. Emphasizes nursing organizations, legal and ethical implications, and addresses trends in management and organizational skills. Explores group dynamics, relationships, conflicts, and leadership styles. Lecture 1 hour per week.

NUR 255 (3 CR.)**NURSING ORGANIZATION AND MANAGEMENT**

Prerequisites are: NUR 111, NUR 180, and NUR 201. Addresses management and organizational skills as they relate to nursing. Emphasizes group dynamics, resolution of conflicts, and leadership styles. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

PARALEGAL STUDIES

See Legal (LGL).

PHILOSOPHY**PHI 101-102 (3 CR.) (3 CR.)****INTRODUCTION TO PHILOSOPHY I-II**

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 211-212 (3 CR.) (3 CR.)**THE HISTORY OF WESTERN PHILOSOPHY I-II**

Provides historical survey of representative philosophers from the pre-Socratics to the present. Introduces the student to development of philosophical thought through selected readings of original works and appropriate critical materials. 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 226 (3 CR.)**SOCIAL ETHICS**

Provides a critical examination of moral problems, and studies the application of ethical concepts and principles to decision-making. Topics may include abortion, capital punishment, euthanasia, man and the state, sexuality, war and peace, and selected issues of personal concern. 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 in the "Description of Courses" section.

PHOTOGRAPHY**PHT 100 (3 CR.)****INTRODUCTION TO PHOTOGRAPHY**

Introduces principles of photography with outside shooting assignments related to lecture topics. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

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 106 (3 CR.)**VISUAL LITERACY: THE PHOTOGRAPHIC IMAGE**

Emphasizes photographic syntax, how it has evolved and how it relates to reading images. Examines psychological, perceptual and contextual issues relating to photographic images. Open to students of all disciplines. Lecture 3 hours per week.

PHT 110 (3 CR.)**HISTORY OF PHOTOGRAPHY**

Surveys important photographers, technical developments, and historical influences on 19th and 20th century photography. Lecture 3 hours per week.

PHT 130 (3 CR.)

VIDEO I

Prerequisite is PHT 100 or 101 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 I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

PHT 131 (3 CR.)

VIDEO II

Prerequisite is 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 135 (3 CR.)

ELECTRONIC DARKROOM

Teaches students to create and manipulate digital photographs. Covers masking, color corrections, and merging of illustrations with photographs. Examines the ethical and property-rights issues which are raised in the manipulation of images. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PHT 201 (3 CR.)

ADVANCED PHOTOGRAPHY I

Prerequisite is 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 206 (3 CR.)

LARGE FORMAT PHOTOGRAPHY

Prerequisite is PHT 102 or equivalent. Discusses 4x5 view camera techniques and controls, and sheet film processing. Demonstrates the image-making advantages of large format photography. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 211 (3 CR.)

COLOR PHOTOGRAPHY I

Prerequisites are PHT 102 and PHT 110. 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 is 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 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 231-232 (3 CR.) (3 CR.)

PHOTOJOURNALISM I-II

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 246 (3 CR.)

ADVANCED PHOTOGRAPHIC PRINTING

Prerequisite is PHT 102 or equivalent. Examines advanced black & white printing techniques and principles of archival processing and presentation. Emphasizes development of individual printing style. Requires a portfolio of high quality prints on subject of choice. 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 non-traditional processes such as non-silver 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

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 264 (3 CR.)
DIGITAL PHOTOGRAPHY

Prerequisites: PHT 101 and ART 283 or PHT 135. Teaches theory and practice of digital photography. Emphasizes use of digital cameras in studio and on location. Teaches advanced techniques of image editing. Provides training in digital image transmission from remote locations. Lecture 2 hours. Laboratory 3 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 out-put. 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.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" 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 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 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.

PED 123 (1 CR.)
TENNIS I

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.

**PED 125 (1 CR.)
BADMINTON**

Introduces skills, techniques, strategies, rules, and scoring. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 126 (1 CR.)
ARCHERY**

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.

**PED 127 (1 CR.)
CYCLING**

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.

**PED 129 (1 CR.)
SELF-DEFENSE**

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.

**PED 131 (1 CR.)
FENCING I**

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.

**PED 133 (1 CR.)
GOLF I**

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.

**PED 135 (1 CR.)
BOWLING I**

Teaches basic bowling skills and techniques, scoring, rules, etiquette, and terminology. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 137-138 (1 CR.) (1 CR.)
MARTIAL ARTS I-II**

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.

**PED 139 (1 CR.)
ICE SKATING**

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.

**PED 141-142 (1 CR.) (1 CR.)
SWIMMING I-II**

Prerequisite for PED 142 is 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.

**PED 144 (3 CR.)
SKIN AND SCUBA DIVING**

Prerequisite is 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.

**PED 150 (1 CR.)
SOCCER**

Emphasizes soccer skills and techniques, strategies, rules, equipment, and physical conditioning. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 152 (1 CR.)
BASKETBALL**

Introduces basketball skills, techniques, rules, and strategies. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 154 (1 CR.)
VOLLEYBALL**

Introduces skills, techniques, strategies, rules, and scoring. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 155 (1 CR.)
WALLYBALL**

Focuses on skills, techniques, strategies, rules, and scoring. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**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 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 is 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. Focuses on physical,

social, and mental well being. 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 are 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 non-swimming 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 in the "Description of Courses" section.

PHYSICAL THERAPIST ASSISTANT

- 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 principals 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 (2 CR.)

PATHOLOGICAL CONDITIONS

Studies specific pathologic conditions commonly seen in physical therapy. Emphasizes musculoskeletal and neurological system conditions. Lecture 2 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 health care delivery. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the “Description of Courses” section.

PHYSICS

PHY 101-102 (4 CR.) (4 CR.)

INTRODUCTION TO PHYSICS I-II

Recommended prerequisite is satisfactory placement score for ENG 111. PHY 101 is the prerequisite for PHY 102. 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 201-202 (4 CR.) (4 CR.)

GENERAL COLLEGE PHYSICS I-II

Prerequisite is MTH 163 or equivalent and satisfactory placement score for ENG 111. Prerequisite for PHY 202 is PHY 201. 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

Prerequisite for PHY 231 is MTH 173 or division approval. Prerequisite for PHY 232 is MTH 174 or division approval, and PHY 231. 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

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 in the “Description of Courses” 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 inter-relationships. 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, and 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 non-profit 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 in the "Description of Courses" section.

PORTUGUESE**POR 103-104 (3 CR.) (3 CR.)****BASIC SPOKEN PORTUGUESE I-II**

Prerequisite for POR 104 is POR 103. Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week

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 115 (3 CR.)

HEALTH PSYCHOLOGY

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 119 (3 CR.)

CROSS-CULTURAL PSYCHOLOGY

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 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 126 (3 CR.)

PSYCHOLOGY FOR BUSINESS AND INDUSTRY

PSY 126 and BUS 201 cannot both be taken for credit toward graduation. Focuses on the application of psychology to interpersonal relations and the working environment. Includes topics such as group dynamics, motivation, employer/employee relationship, and interpersonal communications. May include techniques for selection and supervision of personnel. Lecture 3 hours per week.

PSY 165 (3 CR.)

PSYCHOLOGY OF HUMAN SEXUALITY

Focuses on scientific investigation of human sexuality and psychological and social implications of such research. Considers socio-cultural influences, the physiology and psychology of sexual response patterns, sexual dysfunctions, and development of relationships. Lecture 3 hours per week.

PSY 166 (3 CR.)

PSYCHOLOGY OF MARRIAGE

Analyzes personality interactions in marriage and other intimate relationships. Examines theories of personal development and types of relationships resulting from interactions. Lecture 3 hours per week.

PSY 201-202 (3 CR.) (3 CR.)

INTRODUCTION TO PSYCHOLOGY I-II

Prerequisite for PSY 202 is 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.

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 are PSY 201-202. 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 are PSY 201-202. 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 is 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 is 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 225 (3 CR.)**THEORIES OF PERSONALITY**

Prerequisite is 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.

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.

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.

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 245 (3 CR.)**EDUCATIONAL PSYCHOLOGY**

Prerequisite is PSY 202, 231, or 235. Explores human behavior and learning in educational contexts. Investigates the nature of various mental characteristics such as intelligence, interest, and knowledge. Examines their measurement and appraisal and their significance for educational goals. Lecture 3 hours per week.

PSY 250 (3 CR.)**LAW ENFORCEMENT PSYCHOLOGY**

Prerequisite PSY 100, 125, or divisional 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 is 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**

Prerequisites are PSY 200, 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**

Prerequisite is 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.

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 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 in the "Description of Courses" 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

RAD 100 (2 CR.)

INTRODUCTION TO RADIOLOGY AND PROTECTION

Presents brief history of radiological profession, code of ethics, conduct for radiology students, and the basic fundamentals of radiation protection. Lecture 2 hours per week.

RAD 115 (3 CR.)

PRINCIPLES OF MAGNETIC RESONANCE IMAGING

Prerequisite is 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 health care 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 is 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 is ARRT or eligible. Focuses on the patient care, imaging procedures, physics, and instrumentation related to computed tomography imaging. Lecture 2 hours per week.

RAD 243 (1 CR.)**CLINICAL INTERNSHIP IN COMPUTED TOMOGRAPHY**

Prerequisite is ARRT or eligible. Develops clinical skills in computed tomography imaging procedures. Laboratory 5 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 is 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 in the "Description of Courses" 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.

REA 216 (3 CR.)

REAL ESTATE APPRAISAL

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.

REA 217 (3 CR.)

REAL ESTATE FINANCE

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.

REA 218 (3 CR.)

APPRAISING THE SINGLE FAMILY RESIDENCE

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.

REA 220 (3 CR.)

INCOME PROPERTY VALUATION

Prerequisite is 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.

REA 225 (3 CR.)

REAL PROPERTY MANAGEMENT

Introduces the field of property management. Focuses on principles of tenant selection and retention, financial management, and building maintenance. Lecture 3 hours per week.

REA 236 (1 CR.)

STATE CERTIFIED RESIDENTIAL APPRAISER

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.

REA 238 (1 CR.)

PROFESSIONAL APPRAISAL STANDARDS

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.

REA 245 (3 CR.)

REAL ESTATE LAW

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.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

RECREATION AND PARKS

RPK 100 (3 CR.)

INTRODUCTION TO RECREATION, PARKS & LEISURE STUDIES (FORMERLY INTRODUCTION TO THE FIELD OF RECREATION AND PARKS)

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, non-profit and public sectors, Armed Forces, and therapeutic recreation, as well as volunteer service. Lecture 3 hours per week.

RPK 120 (3 CR.)**OUTDOOR RECREATION**

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.

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.)**OUTDOOR EDUCATION AND INTERPRETIVE SERVICES**

Prerequisite is 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 is 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 (FORMERLY PROGRAM PLANNING, ORGANIZATION, AND GROUP LEADERSHIP)**

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 impacts 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 (FORMERLY FACILITY AND LANDSCAPE PLANNING FOR RECREATION AND PARKS)**

Prerequisite: 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.

RPK 152 (1 CR.)

SPORTS FIRST AID AND SAFETY

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.

RPK 160 (2 CR.)

WILDERNESS FIRST AID

Examines the role of outdoor professionals in wilderness medicine and the response, care, and rescue of outdoor participants in non-urban environments. Provides intensive, in-depth training in the areas of cardio-pulmonary 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.

RPK 170 (2 CR.)

RECREATIONAL BACKPACKING

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 4 hours per week.

RPK 171 (2 CR.)

CANOEING

(FORMERLY RPK 225 CANOE CAMPING)

Prerequisite is 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 4 hours per week.

RPK 175 (1 CR.)

ROCK CLIMBING

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.

RPK 180 (3 CR.)

YOUTH SPORTS ADMINISTRATION

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.

RPK 185 (1 CR.)

RECREATIONAL CAMPING

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.

RPK 201 (3 CR.)

RECREATION AND PARKS MANAGEMENT (FORMERLY RECREATION AND PARKS MANAGEMENT I)

Prerequisite is 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.

RPK 202 (3 CR.)

LEISURE STUDIES PRACTICUM (FORMERLY RECREATION AND PARKS MANAGEMENT II)

Prerequisite is 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.

RPK 206 (1 CR.)

ADVENTURE ROPES COURSES

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.

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 non-governmental), 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 non-urban environments. Is an intensive 72-hour Wilderness First Responder (WFR) course, which provides in-depth training in the areas of: cardio-pulmonary 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 (FORMERLY RPK 155 THERAPEUTIC RECREATION)**

Prerequisite is 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 (FORMERLY RPK 165 RISK MANAGEMENT IN RECREATION AND PARKS)**

Prerequisite is 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 in the "Description of Courses" 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 200 (3 CR.)**SURVEY OF THE OLD TESTAMENT**

Surveys books of the Old Testament, with emphasis on prophetic historical books. Examines the historical and geographical setting and place of the Israelites in the ancient Middle East as background to the writings. Lecture 3 hours per week.

REL 215 (3 CR.)**NEW TESTAMENT AND EARLY CHRISTIANITY**

Surveys the history, literature, and theology of early Christianity in the light of the New Testament. Lecture 3 hours per week.

REL 216 (3 CR.)**LIFE AND TEACHINGS OF JESUS**

Studies the major themes in the teachings of Jesus of Nazareth as recorded in the Gospels, and examines the events of his life in light of modern biblical and historical scholarship. 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 240 (3 CR.)
RELIGIONS IN AMERICA

Surveys various manifestations of religion in the American experience. Emphasizes concepts, problems, and issues of religious pluralism and character of American religious life. 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 in the "Description of Courses" section.

RESPIRATORY THERAPY

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 132 (4 CR.)
RESPIRATORY CARE THEORY AND PROCEDURES II

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 (1 CR.)
PHARMACOLOGY FOR RESPIRATORY CARE I

Presents selection criteria for the use of, and detailed information on pharmacological agents used in pulmonary care. Lecture 1 hour 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 177 (2 CR.)
PULMONARY REHABILITATION, HOME CARE, AND HEALTH PROMOTION

Focuses on purpose and implementation of a comprehensive pulmonary rehabilitation program. Explores procedures and approaches used in pulmonary home care. Identifies and discusses major health and wellness programs applied to cardiopulmonary patients. Lecture 2 hours 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 224 (2 CR.)
INTEGRATED RESPIRATORY THERAPY SKILLS I

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 225 (3 CR.)
NEONATAL AND PEDIATRIC RESPIRATORY PROCEDURES

Prerequisite is RTH 222 or permission of the assistant dean. 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 is 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 253 (3 CR.)**ADVANCED CLINICAL PROCEDURES III**

Offers clinical instruction in advanced patient care practice. Clinical 15 hours per week.

RTH 254 (3 CR.)**ADVANCED CLINICAL PROCEDURES IV**

Offers clinical instruction in advanced patient care practice. Clinical 15 hours per week.

RTH 265 (2 CR.)**CURRENT ISSUES IN RESPIRATORY CARE**

Prerequisite is RTH 236. Explores the current issues and trends affecting the profession of respiratory care. Lecture 2 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

RUSSIAN**RUS 101-102 (5 CR.) (5 CR.)****BEGINNING RUSSIAN I-II**

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 is RUS 102 or equivalent. 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 in the "Description of Courses" section.

SIGN COMMUNICATIONS

See **AMERICAN SIGN LANGUAGE** or **INTERPRETER EDUCATION**

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 in the "Description of Courses" 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. 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). Lecture 3 hours per week.

SOC 207 (3 CR.)**MEDICAL SOCIOLOGY**

Surveys the social, economic, cultural, and individual factors in health and illness. Examines issues of wellness, health-care systems, physician-nurse-patient relationships, medical costs, ethics, and policy. 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 225 (3 CR.)
GENDER AND SEX ROLES**

Analyzes influence of major social institutions and socialization in shaping and changing sex roles in contemporary society. Examines differential access to positions of public power and authority for men and women. Lecture 3 hours per week.

**SOC 235 (3 CR.)
JUVENILE DELINQUENCY**

Studies demographic trends, casual theories, and control of juvenile delinquency. Presents juveniles' interaction with family, schools, police, courts, treatment programs, and facilities. 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 nonwestern 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.)
MINORITY GROUP RELATIONS**

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 in the "Description of Courses" 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 (5 CR.) (5 CR.)
BEGINNING SPANISH I-II**

Introduces understanding, speaking, reading, and writing skills, and emphasizes basic Spanish sentence structure. Lecture 5 hours per week.

**SPA 103-104 (3 CR.) (3 CR.)
BASIC SPOKEN SPANISH I-II**

Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Does not fulfill the foreign language requirement for the Associate of Arts degree. Lecture 3 hours per week.

**SPA 111-112 (3 CR.) (3 CR.)
CONVERSATION IN SPANISH I-II**

Prerequisite is SPA 102 or equivalent. Emphasizes the spoken language, stressing fluency and correctness of structure, pronunciation, and vocabulary. Lecture 3 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 first-hand 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**

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 is SPA 102 or equivalent. 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**

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 is SPA 202 or equivalent. 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 is 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 is SPA 202 or equivalent. 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 is SPA 202 or equivalent. 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 in the “Description of Courses” section.

SPEECH AND DRAMA

see Communication Studies and Theatre

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 (SPECIFY THE 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 services offered at the college including the 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 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 in the “Description of Courses” section.

TRAVEL AND TOURISM

See also HOSPITALITY MANAGEMENT

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 115 (3 CR.)

GROUND TRANSPORTATION, TOURS, CRUISES, SERVICES PLANNING

Prerequisite is TRV 100. Studies travel industry products and procedures including steamship travel and cruises, rail travel, motor coach travel, escorted and independent tours, hotel and resort features and procedures, car rentals, and assembling and selling complete travel packages. Includes the use of an airline computer reservation system to access ground arrangement information. Lecture 3 hours per week.

TRV 125 (3 CR.)

TRAVEL SALES AND CUSTOMER SERVICE

Prerequisite is 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 136 (3 CR.)

TOUR GUIDING AND MANAGEMENT

Studies basic aspects and skills involved in tour guiding and tour management. Covers the components of a tour, trends, and the approaches to

public speaking, cultural sensitivity, and working with various age groups and the physically challenged. 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.

TRV 190 (1–5 CR.)

COORDINATED INTERNSHIP

TRV 211 (4 CR.)

AIRLINE COMPUTER RESERVATION SYSTEMS I

Studies airline computer reservation system entry instructions and processes to enable the student to acquire proficiency in developing itineraries, building passenger name records, and accessing other standard airline and travel information procedures. Includes car rental, hotel reservation, and other functions of major computerized reservation systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

TRV 220 (3 CR.)

PRINCIPLES OF GROUP TRAVEL AND TOUR OPERATIONS

Prerequisite is TRV 115. Introduces procedures and practices used in the travel industry to plan and operate travel programs for various sized groups. Encompasses all aspects of group travel, from the selling and planning stages to specific day-to-day details of directing and managing a group tour. Lecture 3 hours per week.

TRV 230 (3 CR.)

MARKETING AND MANAGEMENT OF TRAVEL SERVICES

Prerequisite is TRV 115. Focuses on the management and marketing activities and functions in the travel industry. Studies planning and staffing procedures, specialized sales and management reports, profit analysis, and the unique problems of marketing services. Emphasizes the analysis of case studies of travel organizations. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses as described in the “Description of Courses” section.

VETERINARY TECHNOLOGY**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 121-122 (3 CR.) (3 CR.)

CLINICAL PRACTICES I-II
Presents clinical techniques commonly performed in veterinary practice. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

VET 131-132-133 (3 CR.) (3 CR.) (3 CR.)

CLINICAL PATHOLOGY I-II-III
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
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 216 (2 CR.)

ANIMAL PHARMACOLOGY
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 are VET 121-122. 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.

Please contact the appropriate division for the availability of general usage courses as described in the "Description of Courses" section.

VIETNAMESE**VTN 101-102 (5 CR.) (5 CR.)**

BEGINNING VIETNAMESE I-II
Develops the understanding, speaking, reading, and writing of Vietnamese, and emphasizes the structure of the language. Lecture 5 hours per week.

VTN 201-202 (3 CR.) (3 CR.)

INTERMEDIATE VIETNAMESE I-II
Prerequisite: VTN 101-102. Continues to develop understanding, speaking, reading, listening and writing skills. Classes conducted in Vietnamese. Lecture 3 hours per week.

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 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 is 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 is WEL 121 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 is 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 are WEL 122, WEL 141, WEL 150, and MTH 103 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 are WEL 142, WEL 150, and MTH 103 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.

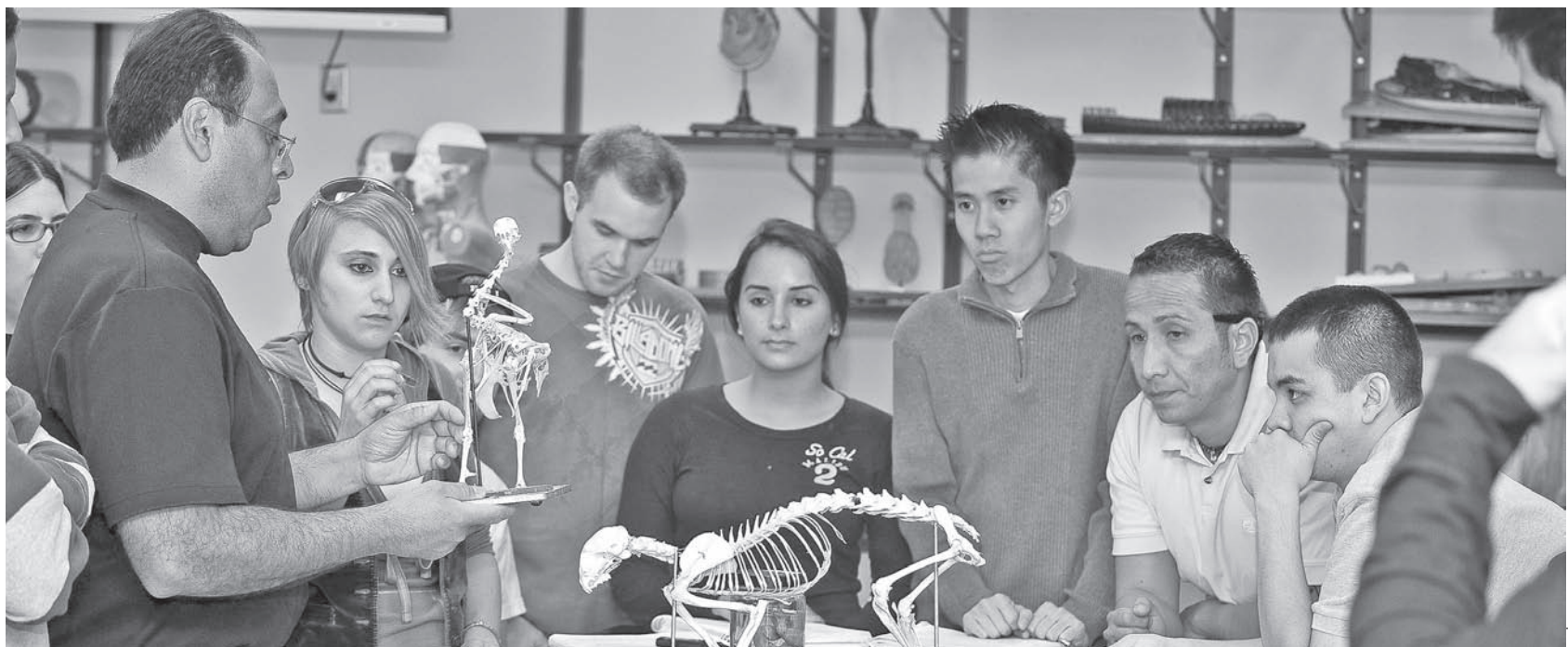
WEL 150 (2 CR.)
WELDING DRAWING AND INTERPRETATION

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 in the "Description of Courses" section.



FULL-TIME FACULTY

The six campuses are indicated as follows: AL, Alexandria; AN, Annandale; LO, Loudoun; MA, Manassas; MEC, Medical Education Campus; and WO, Woodbridge. Those at ELI, Extended Learning Institute are so indicated. Those individuals with cross campus responsibilities are indicated as CS, College Staff.

Adamson, Heidi B.

Associate Professor; B.A., M.A., George Mason University; Coordinator, Academy for Culture and Language (MA)

Abdelbaki, Alaeldin H.

Assistant Professor; B.A., University of Virginia; M.S., Virginia Commonwealth University; Mathematics (LO)

Aboshadi, Gamal A.

Assistant Professor; B.A., Helwan University; M.A., Ph.D., Minia University; Physical Education (AN)

Agnich, Joseph

Assistant Professor; B.S., Alderson-Broaddus College; M.Phil., M.S., George Washington University; Mathematics (LO)

Ahmad, John G.

Assistant Professor; B.A., George Mason University; M.A., George Washington University; Accounting (AN)

Ahmadi, Shahrokh

Professor; B.S., Virginia Polytechnic Institute and State University; M.S., West Virginia University; Ph.D., University of Maryland; Mathematics (MA)

Ahmadi, Sharis

Assistant Professor; B.S., West Virginia Institute of Technology; M.S., West Virginia University; Mathematics (LO)

Ahmed, Nauri D.

Assistant Professor; B.S., Virginia Polytechnic Institute and State University; B.S., University of Maryland University College; M.S., Liberty University; Accounting (WO)

Ahn, Mary T.

Instructor; B.S., University of Maryland; M.S., Johns Hopkins University; Counselor (MA)

Ahrens, David A.

Assistant Professor; B.A., University of Hawaii; M.A., University of Oregon; Instructional Technologist, Television Production (ELI)

Albert, Laura P.

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Alford, Terry

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Aller, Mary S.

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Alonso, Ana

Instructor; B.S., University of Florida; M.A., George Mason University; Spanish (AN)

Amato, Daria U.

Associate Professor; B.S.N., Spalding College; M.S.N., Catholic University; Nursing (MEC)

Anand, Smriti

Assistant Professor; B.S., University of Mumbai; M.S., University of Pune; Ph.D., Wayne State University; Chemistry (AL)

Anderson, Annemarie K.

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Anderson, Edward A., Jr.

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Anderson, Maria B.

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Anwari, M. Hashem

Professor; B.S., Tri-State University; M.S., North Carolina A&T State University; Information Technology (LO)

Applegate, Christopher G.

Instructor; B.B.A., M.B.A., George Washington University; Director of Arlington Center and Continuing Education and Workforce Development (AL)

Arra, Christopher T.

Assistant Professor; B.A., George Mason University; M.Ed., University of Massachusetts; Ph.D., Indiana State University; Psychology (WO)

Ashkenas, Denise C.

Instructor; B.A., Tulane University; M.A., Johns Hopkins University; English (AL)

Austin, Jennifer

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Aylward, Therese

Assistant Professor; B.S., Georgetown University; M.Ed., Lesley College; English as a Second Language (AL)

Backus, Gillian S.

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Baer, James A.

Professor; A.B., Oberlin College; M.A.T., Antioch Graduate School of Education; M.A., Ph.D., Rutgers University; History (AL)

Bailey, Raymond C.

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Banas, Edward J.

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Barr, Karen J.

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Bartley, Christian D.

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Bausch, Robert

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Beattie, Mark C.

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University; Coordinator, Media
Processing Services (CS)

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Bennett, Todd A.

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University; Counseling (CS)

Bentley, Callan

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M.S., University of Maryland;
M.S., Montana State University;
Geology (AN)

Beringer, Ivy

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Clemson University; M.Ed.,
University of South Carolina;
Ed.D., North Carolina State
University; Early Childhood
Education (AL)

Bhadra, Laura J.

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College; M.A., University of
Connecticut; Ph.D., American
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Bidwell, Andrew W.

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D.V.M., Virginia Polytechnic
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Veterinary Technology (LO)

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M.S., West Chester University of
Pennsylvania; Counselor (AL)

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North Carolina; Ph.D., George
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Communication and Human
Studies Division (LO)

Bodwin, Zenaida D.

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Information Technology (AN)

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Indiana University; Accounting (WO)

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La Salle College; Automotive
Technology (MA)

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M.S., George Washington
University; Geology (LO)

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University; Dean, Languages and
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Boykin, Ronald A.

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Psychology (AL)

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Education (AN)

Brawner, Robtrice D.

Instructor; B.A., Hampton
University; M.A., Temple
University; Counselor (AL)

Brazie, Michael L.

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and State University; Business
Management (LO)

Bredeck, Martin J.

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State University; Mathematics (AN)

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University; M.S., University of
Dayton; Ph.D., American University;
Dean of Students (AN)

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District of Columbia; M.S., Ph.D.,
Georgetown University; English as
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Developmental English (LO)

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M.S., Georgetown University;
Nursing (MEC)

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Brown, Geoffrey

Instructor; Auto Body (AL)

Brown, Julia R.

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Brown, Keith

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Burtis, Eric W.

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Cantwell, Denise M.

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Caporale, Jill F.

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Carr, Linda Page

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Carrington, Michael A.

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Carroll, Bruce E.

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Carter, Russell M.

Associate Professor; A.A., St. Leo University; B.A., Shaw University; M.P.A., Troy University; Administration of Justice (MA)

Castaneda, Ivan E.

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Casal, Laura C.

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Catoe, Rodwell M.

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Chamberlain, Nancy A.

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M.S., Radford University;
Recreation and Parks (AN)

Chamlou, Afsaneh

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Virginia Community College; B.S.,
Marymount University; M.S.,
D.A., George Mason University;
Information Technology (AL)

Charles-Pierre, Stephan

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University of Maryland Eastern
Shore; M.S., Hofstra University;
A.G.S., University of Maryland;
Counselor (MEC)

Charleza, Mary M.

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University; M.P.H., Benedictine
University; M.A., DePaul University;
English as a Second Language (AN)

Chatterjee, Sumitav

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Warren Wilson College; M.Ed.,
M.S., George State University;
Mathematics (AN)

Chi, Shaoyu

Professor; B.A.,
Sichuan International Study
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Northern Illinois University;
Instructional Technologist (ELI)

Chiles, Adam C.

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University of Victoria; F.A.,
University of Arizona; English (AN)

Chilka, Rashmi B.

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University; M.A. Purdue University;
Ph.D., University of Washington;
History (AN)

Cho, Sue Jean

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University; A.M., Ph.D., Harvard
University; History (AL)

Chouinard, Kevin

Professor; B.S., University of
Notre Dame; Ph.D., University of
Virginia; Mathematics (LO)

Cintas, Nicole A.

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B.S., Pennsylvania State
University; Ph.D., University of
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Nursing (MEC)

Clark, Donna A.

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Spanish (WO)

Clark, Terrance L.

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Clarke, David A.

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Cockburn, Tregel M.

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University; M.L.S., University of
Maryland; Librarian (WO)

Como, Robert M.

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University of Toledo; English (MA)

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Accounting (AL)

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State University; Ph.D., Howard
University; Communication
Studies and Theatre (AL)

Cooper, Cinder S.

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South Carolina; M.A., Northern
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Cornell, Andrew B.

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University; M.H.A., Baylor
University; Dean, Allied Health
Division (MEC)

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Post-Graduate Diploma, George
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Auxiliary Services (CS)

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M.S., Johns Hopkins University;
Geography (LO)

Crawford, Kimberly A.

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Gannon University; J.D., Dickinson
School of Law; Administration of
Justice (WO)

Credle, Joann O.

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North Carolina Central University;
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Pennsylvania; Counselor (AN)

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John's University; Ph.D., American
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Maryland; D.A., George Mason
University; Physical Education (WO)

Curtin, Georganne

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Nursing (MEC)

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M.A., George Washington
University; Counselor (AL)

Daily, Dianne M.

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University of Kansas; English (AL)

Daniels, Jennifer K.

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M.A., George Mason University;
English (AN)

D'Antonio, Mark D.

Associate Professor; A.A., Prince George's Community College; A.A.S., Northern Virginia Community College; B.G.S., University of Maryland; M.B.A., Averett University; D.B.A., NOVA Southeastern University; Business Management (WO)

Daron, Patricia R.

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David, Sheri I.

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Davis, Deshaun E.

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Davis, Lee R.

Instructor; B.A., Bates College; M.S., Simmons College; Librarian (CS)

Deal, Kitty L.

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DeGidio, Deanna M.

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Delean, Edward P.

Associate Professor; B.A., University of Virginia; M.S., George Mason University; Information Technology (AL)

Dennis, Patrick F.

Instructor; Air Conditioning and Refrigeration (WO)

Deppe, Marilyn J.

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Depuydt, Donald P.

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Dimkova, Dimitrina

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Di Silvio, Elizabeth J.

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Donnelly, Michael P.

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Dooley, Wanda C.

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Dowlati, Ramezan P.

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Doyle, Terrence A.

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Drasner, Steven

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Drucker, Beverlee K.

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Dusek, Robert G.

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Dy, Charlie L.

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Howard University; Director,
Affirmative Action/Minority and
Legal Affairs (CS)

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University; M.S., University
of Miami; Ph.D., University of
Connecticut; Biology (AN)

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M.A., Missouri State University;
Communication Studies and
Theatre (WO)

Edwards, Stewart W.

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American University; M.B.A.,
Averett College; Business
Management (AN)

Eftekhari, Abbas

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of Texas at Arlington; Dean,
Math, Science and Engineering
Division (AN)

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Southeastern Louisiana
University; M.S.S., Mississippi
State University; Sociology (AN)

Eichers, R. Timothy

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George Mason University; M.S.,
The Johns Hopkins University;
Information Technology (LO)

Elsberg, Constance M.

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Abbe, Holly	Avent, Pamela A.	Bhadra, Dipasis	Brooks, William E.
Abbott, Clyde M.	Aye, MonMon	Bicknell, Wade Devereux	Brotman, Donald N.
Abdelrasoul, Kamal S.	Azbill, Munsook K.	Biddle, Henry B.	Brown, Karen K.
Abdollahpour, Heshmat	Aziz, Shahzad	Billups, Anne B.	Brown, Kevin N.
Aberle, Tyler J.	Bahng, Gracia Wonhwa	Bilodeau, Ruth	Brown, Kyle Nelson
Abston, Emanuel J.	Baidwan, Hemant S.	Binkley, Cheryl G.	Brown, Laurel Benson
Acham, Lee Jay	Bailey, Carl B.	Bird, Alan R.	Broyles, Kenneth M.
Ackerman, Lynne	Bailey, Shawn K.	Bishop, Harold	Brunkow, Bryon Lee
Adams, Frank Robert	Baker, DaJoie Croslan	Bishop, Jason Edward	Buksar, Lynda
Addei, Victoria A.	Baker, Josiah Robert	Black, Elizabeth A.	Bullock, Kenneth R.
Addisu, Tadesse A.	Baker, Michael J.	Blackmon,	Burford, James E.
Afentakis, Marina X.	Balachov,	Tiffany Michelle	Burton, Rosemary A.
Afshar, Arash	Mikhail Izakimovich	Blackwell, David Darnell	Busch, Warren T.
Ahmed, Mohammad	Ball, Lakisha Shanta	Blair, Bernard A.	Bushar, Megan C.
Abrar	Ballif, Sandra M.	Blankenship,	Butcher, Raymond
Ahmed, Sameera A.	Bam, Refiloe M.	Michael Keith	Butler, Renee
Al Askari, Ghida Tarik	Bansal, Rajesh K.	Blansitt, Edward L.	Button, Elizabeth L.
Al Mukhtar,	Barbee, Warren E.	Blitzer, Marsha Jane	Button, James D.
Colleen Marie	Barber, Elaine H.	Bobbitt, David C.	Byrd, Meredith L.
Albamonte, Elena Marie	Barker, Steven Lawrence	Bobys, Richard	Cable, Kathy R.
Albert, Susan M.	Barnes, Roberta O.	Bobzien, Catherine H.	Caes, Charles J.
Alehossein, Hamideh	Barnoy, Ishai	Boelk, Myrell Lee	Caesar, Colin I.
Alexander, David M.	Barr, Robert D.	Boggs, James D.	Calcano, Ivan
Alexis, Ann J.	Barth, Mei-Jean Kuo	Boice, Lawrence R.	Calderon,
Ali, Nadia	Bartholome, Mark R.	Boland, Madhulika G.	Susan Johanna
Alian, Amr	Barton, George	Boniface, Robin	Caldow, Janet
Mohammed Anwar	Basham, Sherry	Boone, Shajuana A.	Caldwell, Tracie Lovette
Allen, Julie	Basoah, Kofi	Bostain, Lynn W	Camazon-Mediavilla,
Allison, David R.	Bass, Carol A.	Bouchet, Frederic C.	Monica
Al-Mahdi, Ibrahim K.	Bateman, Elizabeth R.	Bowen, Andrew Blaine	Camp, Harold Dean
Alsaeed, Ibrahim H	Batson, Alonzo L.	Bowling, Lloyd Russell	Campbell,
Al-Tahrawi, Khalil A.	Bawa, Raj	Boyle, Mary	Douglas Patrick
Alwani, Zainab	Beach, Paula J.	Boyle, Matthew W.	Campola, Patricia Lynn
Amato, Roger V.	Beamer, Kevin Allan	Bradford, Arnold J.	Cannon,
Anderson, Hunt	Bechler, Kimberly A.	Bradley, Adam C.	Christopher Joseph
Anderson, Michael G.	Beck, Cynthia	Bradshaw, Dennis	Capobianco, Arthur P.
Anderson, Sara F.	Beckloff, Nicholas M.	Brady, Terrence V.	Cappellari, Susan J.
Anderson, Theresa	Bedore, Joan	Brahmbhatt, Prerna M.	Cappetta, Rebecca A.
Andreoli, John W.	Beemer,	Braithwood, Angela	Capps, John R.
Andrews, Byron F.	Christopher David	Jean - Potter	Carder, Tiffaney Dawn
Andrews, Edward M.	Beene, Joe F.	Brashears, George	Carlin, Renzo
Andrews, Mark S.	Bekhor, Rose	Braunstein,	Carlson, Aaron
Anthon, Brian David	Bekhor, Stephanie A	Robert Howard	Carlson, Lisa Squadrini
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Archie, Dominique S.	Habtamu Zewdie	Brindle, Cheryl	Carroll, Robert Morrison
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Arora, Gurcharan	Berman, Jay M.	Bristow, William J.	Carter, Alfred J.
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 Cascio, Bonnie J.
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 Cassedy, Kathleen Gay
 Castaneda, William
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 Chaaban, Nader H.
 Chabot, Carrie Susann
 Chao, Elizabeth
 Shah-Fang
 Chapman, James A.
 Chapman, Julie N.
 Chapman, Paul Kendall
 Chappell, Angela S.
 Charlow, Renee' L.
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 Chau, My
 Chaudhuri,
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 Chen, Michael L.
 Chen, Vivien
 Chesley, Richard
 Chevalley, Sherry H.
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 Siddig, Nagat Mahmoud
 Silva, Lawrence K.
 Silva-Krott, Ilse U.
 Silvola, William H.
 Simmons, Alandra M.
 Simon, Sherry V.
 Simpson, Griswold C.
 Sinckler, Robin Y.
 Singer, Sherry L.
 Singh, Kimberly M.
 Sinwell, Michael J.
 Sipe, Todd Ronald
 Sisel, Elizabeth H.
 Sjolinder, Michelle A.
 Sklar, Lawrence B.
 Skocz, Dennis Edward
 Slagle, Wendi D.
 Smith, Albert L.
 Smith, Donald
 Smith, Donald E.
 Smith, Donald T.
 Smith, Edward Anthony
 Smith, Jeanette J.
 Smith, Patricia M.
 Smith, Robert M.
 Smolsky, Mary Alison
 Snyder, Terri L.
 Sobon, Jill V.
 Sodaro, Gloria M.
 Soe, Myint
 Sojka, Marek
 Somosa, Hugo
 Song, Hee Kwan
 Sood, Sanjay
 Sotherden, Janis S.
 Soult, Jennifer H.
 Sound, John S.
 Southern, Kimberly E.
 Southworth, Barbara L.
 Sovine, Jennifer Grace
 Spatz, Elizabeth Ann
 Spencer, Jenifer Lynn
 Spencer, Yvonne W.
 Sprinkle, John Harold
 Squarciafico, Girolamo
 Stabler, Alexandra M.
 Stahl, Paul
 Stallings, Christopher R.
 Stanford, Alexandra
 Nicole (Nikki)
 Stanga, Jane Louise
 Stavropoulos, John G.
 Stawasz, Jennifer H
 Steele, Richard Laurice

Steere, Jay
 Stenberg, Kim Y.
 Stepien, Deborah
 Sternberg, Ryan A.
 Stevens, Dianne F.
 Stevens, Shelley
 Stewart, William F.
 Stokes, Gerald Virgil
 Stone, Linda L.
 Stoneman, Philip N.
 Stout, Larry D.
 Strasser, Joka V.
 Strauss, Marie-Jayne M.
 Strehli, Ildiko
 Stringham, Robert Louis
 Strong, Derek
 Strother, Kathleen L.
 Stroud, Jennifer Lynn
 Sullivan, Laura Mane
 Sultana, Nahid
 Sunny, Susan
 Suomi, Robin K.
 Surma, Erika L.
 Sutphin, Everett W.
 Sweeney, Rachel W.
 Swetland, Breanna H.
 Swetnam, Therese M
 Szlapak, Matthew
 Taber, Daniel E.
 Taddeo, Brenda Sue
 Tan, Jian
 Taneja, Manjit S.
 Tannenbaum, Fran-Linda
 Taormina, Agatha
 Tapia, Rosalie
 Taskovic, Maja
 Taylor, Andrene
 Taylor, Charles P.
 Taylor, Kimberly Michelle
 Taylor-Wilson, Kim
 Teale, Michael J.
 Tedesco, Patricia
 Teller, Hugh
 Terapane, John F.
 Tesema, Yohannes T.
 Thomas, Arva
 Thomas, Bethani
 Jhana'e Lorrina
 Thomas, Erin A.
 Thomas, LeeAnn
 Thompson, Joseph A.
 Thoms, George
 Thornhill, Kenneth C.
 Thunman, Nils
 Thurman, Vanissa S.
 Tiwari, Rachna
 Topchubashova,
 Samira
 Toro, Ailing
 Torres, Nelson Eddy
 Toure, Oumar
 Toxie, Paul G.
 Tran, Bac
 Treiber, John F.
 Triandaf, Ioana A.
 Trickey, Steven J.
 Tripp, Alton Parker
 Trost, Ryan W.
 Trott, Edith E.
 Truesdell, Carol H.
 Tucker, Megan H.
 Tucker, Susan
 Turlington, Linda J.
 Turner, Miriam E.
 Turner, Tildon L.
 Turnquist, Jamie J.
 Twomey, Debra J.
 Umberger, Sarah
 Unger, Rudolf
 Uri, Noel D.
 Vagts, Brian K.
 Valente, Delia
 Van Riper, Pete H.
 Van Sickle, John C.
 Van Zummeren, James I.
 Vanaman, David Clyde
 Vance, Rebecca
 VanEpp, Christina
 Vaziri, Golnar
 Vega, Alvin
 Venner, Christoph L.
 Vera, Ana L.
 Verma, Nidhi
 Vikis, Alexia D.
 Vilhelmsen, Stephen
 Villani, James A.
 Vishwanath, Priya
 Vu, Hung M.
 Vu, Jimmy M.
 Wade, Jeffrey A.
 Walden, Glenn Michael
 Waldroup, Louise Mona
 Walker, Christopher C.
 Walker, Kelly W.
 Walker, Matthew
 Walker, Ralph Douglas
 Wallace, David S.
 Wallace, Lauren N.
 Wallen, Doug O.
 Walton, Brien C.
 Wandrey Aykens,
 Jennifer S.
 Wang, Jinwei
 Wang, Zhengyu
 Ward, Carla F.
 Ward, David Orville
 Ward, Laurence R.
 Ward, Stephen D.
 Warner, Duncan R.
 Wasik, Paul
 Watson, Russell Patrick
 Weatherhead, Charles
 Weaver, Jacqueline M.
 Webb, Jennifer Lynn
 Weber, Lucy
 Weber, Maya
 Weimer, Michael J.
 Weinfield, Anne M.
 Weir, Jeffrey Michael
 Weisz, Alice M.
 Welch, Michael A.
 Welland, Diane A.
 Wells, Camilla Jane
 Wells, John D.
 Welsheimer, Abby Lynn
 Westerhoff, Matthew S.
 Whalen, Charles P.
 Wharff, Jeffrey C.
 Whimpenny, Walter G.
 Whipp, Kristen Anne
 Crosby
 White, Charise M.
 Whitehead, Peter S.
 Whitehurst,
 Shanika Tanise
 Whitlow, Cathy L.
 Wijdoogen, Michael S.
 Wilan, Richard A.
 Wilkinson, Carolyn B.
 Wilkinson, Tiffany B.
 Williams, Andrea
 Williams, Andrea M.
 Williams, Bruce E.
 Williams, David
 Williams, Hollis E.
 Williams, James R.
 Wilson, Diane L.
 Wilson, Donna L.
 Wilson, James Frederick
 Wilson, Teresa A.
 Wiltse, Andrea E.
 Winchell, Dale R.
 Winchester,
 Fernanda Bohrer
 Winder, David J.
 Wing, Jennifer H.
 Wiskin, Joel M.
 Wolf, Ronald W.
 Wong, Benita M.
 Wood, Theodore A.
 Wooley, Brian Frederick
 Worland-Esquith,
 Samuel
 Wurie, Chernoh
 Wurie, Janet B.
 Wykle, Mary O.
 Wyrsh, Carolyn I.
 Xu, Xiaohuan
 Yancy, Carlos
 Ybarra, Claudia Melissa
 Yi, Meekyoung
 Yoest, John
 Yon, Su Jin
 Young, Crystal C.
 Young, Robert C.
 Young, Stacey L.
 Youssef, Omaia A.
 Yowell, Jennings B.
 Yusuf, Osman H.
 Zagmout, Ousama M.
 Zahwa, Hassan
 Zayed, Nijmeh S.
 Zerihun, Melakeselam
 Zimmermann, Bruce A.
 Ziu, Elena M.
 Zollman, Margaret R.
 Zook, Marsil
 Zuo, Huangi

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

Richard J. Ernst	Elizabeth Dickson	William E. Huber	Jack W. Partlow
	Dhruv Dixit	Thomas M. Huddleston	Nellie Pearson
	Elizabeth Dixon	F. Kenneth Huston	Betty L. Peterson
Nancy Aiello	Madonna Domenichetti	Wallace S. Hutcheon	Robert L. Petrella
Ruth Ann Allaire	B.J. Ellis	Mary B. Jay	John H. Popeck
Walter G. Allen	Tom Ellis	Mariette Johnson	Victoria Poulakis
Chalmers Archer, Jr.	Winola Frances Emory	Vivian M. Kallen	Ellen Raphaeli
Evelyn Atchison	Patricia H. Eyer	George Kevorkian	Rebecca Reister
Janice Bachtell	David Felt	Robert Kilmer	Daniel J. Reynolds
Sandra Bailey	Rudolph Fiorillo	Eunice B. Kirkbride	Jimmie Reynolds
Alison Baker	Frederick F. Flemming	Robert W. Koberg	R. Neil Reynolds
Susan Baldwin	Mary Flynn	Claudio Krieghoff	Daniel W. Riley
Anne J. Banks	Ann Ford	Elmer C. Laedtke	Percy E. Robinson
Max. L. Bassett	Donald H. Frantz, Jr.	Thomas F. Laws	Carolyn Roth
Sally A. Bedont	Edward P. Freedman	Helene T. Lesansky	Cathy E. Sabol
Joe Beene	Michael Frieband	Ann St. Clair Lesman	Henry (Judd) Sage
John H. Bigelow	Sherman Frye	Robert G. Lesman	Larry Sasscer
Frederick H. Billups	Alvin A. Fuchsman	Charles R. Lilley	Monica F. Sasscer
Patricia Bizier	Robert E. Furcolow	Margaret K. Liu	Lydia C. Schurman
Katherine Blair	George Garrigan	Mary Ann Lizondo	John M. Schwalje
Rosalind Blunt	Guy F. Gibbs	Karen Luquire	Barbara Seaman
Gerald P. Bone	Pauline Gillette	Michel Marette	Martha W. Sellers
Arnold J. Bradford	Virginia H. Graves	Barbara S. Marx	Dorothy U. Seyler
Jill Niebrugge Brantley	Rebecca W. Groff	William McCampbell	Michael E. Shahan
Barbara Brogan	Mildred C. Gronlund	Herbert E. McCartney	William T. Shannon
Walter Bulmer	Donald J. Grubb	William McDaniel	Lawrence Shapira
J. Fred Burgess	Anne Guandolo	Patricia McElroy	Susan Sharpe
Lynn Cahoon	Janet Lee Hall	Wyatt McGinnis	Mary L. Shaw
John R. Capps	Lander C. Hamilton	Nancy McNamara	Genevieve Sheridan
Eltse B. Carter	Elizabeth Hammer	Eula M. Miller	Cecil Shuler
Joseph M. Carter	Brian Hansen	Charles Melton	Celeste M. Sichenze
Thomas E. Carter	Henry Hanson	Moses Michel	Howard Simmons
Lynn Casabianca	Thomas W. Hardy	David Michaels	M. Noel Sipple
Dorothy Cavagnaro	Henry C. Harmon	Ervinia (Venus) Miller	Lois H. Smith
Barbara F. Chambers	Richard Harris	Sara Miller	Robert L. Smith
Chih-Mei L. Chen	Mary Inez Harrison	Joseph G. Montero	Vme Edom Smith
Gen Sen Chu	William A. Harrison	George C. Moore	Beatrice Sparling
Edward A. Coleman	Velma E. Harwood	Carol Mowbray	Mary L. Stites
Gordon Cook	J. Dunstan Hayden	James A. Mustachio	Fern Stukenbroeker
Sheila Craig	Fred J. Hecklinger	Pamela A. Narney	Carol Sullivan
Blanton O. Croft	Beverly Heneghan	June A. Naclerio	Patsy Sumner
Z. Thomas Deardon	Michael Heneghan	C. Mary B. NeSmith	A. Kenneth Swanson
Brian J. Delaney	William C. Hill	Jean C. Netherton	Agatha Taormina
Willard A. Delano	Van Dale Holladay	Elaine Niner	Alice Taylor
Marian Delmore	Horace Clinton Holley	Laura K. Noell	David L. Taylor
Anthony J. DelPopolo, Sr.	Barbara Holt	Harry F. Painter	Jane B. Taylor
Marjorie C. Dennin	Jean Horn	James A. O'Connor	Gloria P. Terwilliger
Irving L. Denton	Josef R. Horowitz	Leonard L. Palumbo	Ruth G. Thomas
Robert G. Depczenski	Wilfred B. Howsmon, Jr.	Lynn Pape	James R. Tiffany

Merle O'Rourke
Thompson
M'Kean Tredway
Edith Trott
Charles E. Tychsen
Larry S. Underwood
Paul Vespucci

Cyrilla M. Vessey
Louise Vezina
Evelyn Wade
Susan Wagner
Edwin Walker
James Wall
Virginia Ward

Marietta E. Warden
Elizabeth Ware
Gladys Watkins
Ann Marie Weinfield
Rosemarie Westburg
Lawrence Wheeler
Dee Wayne White

Richard Wilan
Barbara Laime Williams
Millicent J. Williams
Diane Wilson
John B. Wooldridge, Jr.
Dale Wurzer
Barbara Wyles

CLASSIFIED STAFF EMERITUS AWARD

The Classified Staff Emeritus 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.

Lin A. Bailey
Rita Bender
Joyce Bixler
Julia I. Bowden
Carol N. Bradley
Geraldine Bridge
Joyce Cain
Francina Campbell
Ann Carro
Henry Chambers
Yong Chung
John Cirillo
Richard Clouser
Johan E. Dennett
(posthumously)
Virginia Diguisseppi
William Dudley
Joyce Emery
Susan Farmer

Marsha N. Fisher
Diane D. Fochtman
Eve Fritz
Suzanne Fuller
George L. Gargus
Mary Ellen Gargus
Bill Gentry
Roger K. Gibson
Fredericka H. Gordon
Carol Gorey
Anita Gulbrandsen
R. Jean Heffren
Nell C. Henry
Louise Herzfeld
Doris A. Hinline
Claire D. Horgan
Diana Kerns
Jerre Kilgore
Lois Koehnke

Mary W. Krause
Violet Laws
Barbara Marr
Danelle A. Martin
Marjorie Massey
William McCleary
Geraldine Meehan
Mary Beth Montemerlo
Ann M. Mooney
Bobbie J. Mullins
Doreen A. O'Connor
Doris B. Olofson
Patricia Payne
Larry Perlstein
E. Jean Pruitt
Delores Radford
Gwendolyn Romano
Diana B. Sadler
Merrilee Scida

Penny Seitz
Sharon Shue
Maren Smith
Pearl Smith
Steve Smith
Thomas W. Smith
Louise Sorbello
Susanne M. Stevenson
Ella May Sutherland
Michael J. Tedros
Rebecca Thomas
Donna M. Vandevender
Claire A. Weaver
Carolyn J. Wellman
Sonya Wichelt
Joseph Woods
Rolland Vess
Edward Yellman



ADVISORY COMMITTEES 2010–2011

Accounting

Keith Bassett,
Retired Adjunct Faculty, NOVA
Tom Burger,
Exe. Dir. Professional Mgrs.
Assoc., IRS
Elena Cruz, Ajilon Finance
W. Greg Modesitt, CPA
Joshua Potter,
Staffing Mgr., Accountemps
Deborah Wilson,
CPA, Updegrove, Combs,
McDaniel & Wilson, PLC

Administration of Justice

Robert Carlisle, Chief of Police,
Vienna Police Dept.
David Gilmore, Chairman,
Academic Programs, Wash.
Chapter ASIS
Glendell Hill,
Sheriff, Prince Wm. County
Cliff Jacobs, Mgr. Security &
Emergency Svcs., Lockheed-Martin
Scott Leonard,
Academy Curr. Spec., NVCJA
Paul Maltagliati,
Chief Deputy Sheriff, Fairfax Co.
Donald McKinnon, Jr., Deputy
Chief of Police, City of Manassas
Alfred Miller, Capt./Dir., Pr. Wm.
Co. Criminal Justice Academy
Joseph Price,
Chief of Police, City of Leesburg
Donald Richards,
CPP, Gov. Prog. Mgr., IriScan, Inc.
Peter Stephenson,
Chief Probation/Parole Officer,
Dist. 10, Arlington
Toussaint E. Summers, Jr.,
Chief of Police, Town of Herndon

Air Conditioning/ Refrigeration

David Bonesteel,
Sales Engr., Sporlan Valve Co.
William Harlow, Pres., Stafford
Elect. Heating & Air, Inc.
Charles Moran, III,
Moran's Refrigeration Svcs., Inc.
Gregory Paynter,
Branch Mgr., Lyon, Conklin & Co.
Stuart Sullivan, Dir. of Facil. Mgt.,
U. of Mary Washington
Richard Wirz, Pres./Owner,
Nationwide Refrigeration, Inc.

Architecture Technology

Craig Deering, Assoc. Principal,
Gauthier, Alvarado & Assoc.
George Martin, Assoc. Dean
Undergrad. Studies, School of
Arch., Catholic U.
Kevin Pennington, Assoc.
Architect, Davis, Carter Scott, P.C.
Bruce Zimmermann, Pres.,
Brackett & Zimmermann Assoc.

Automotive Technology

Alexandria Campus:
Oscar Alvarado, Master Ford
Tech., Jerry's Ford
Michael Connell,
Foreman, Koons Ford
Robert Livingstone, Dir.,
Automotive Svcs., AAA Mid-Atlantic
James LoMedico,
Pres., Anderson Sunoco
Phillip Winston, Territory Mgr.,
Standard Motor Products, Inc.

Manassas Campus:

George Apperson,
Compliance Officer, VA DEQ
Gene Brown, II,
Shop Foreman, Stringer's EXXON
Roy Craig, Contractor/Owner,
Handy Man, Inc.
Harry Houckes, SE Regional Rep.,
Nat'l. Bus. Aviation Assoc.
Richard Jackson, Auto. Tech.,
Porsche of Tysons Corner
Richard Kenefik,
Tech., Lindsay Cadillac
William (Tony) Knick,
Tech., Moore Cadillac
Ky Nguyen, Student Rep., NOVA
Rodney Oke, Svc. Mgr., G&C
Express Fleet Service
Carl Pocaró,
Emissions Compliance Off., DEQ
Alex Sallwey,
Retired Auto Machinist
Graham Savage,
Auto. Tech., Hunter Woods Exxon
Biotechnology
Debra Barnes, Dir. of Immuno-
Chem. Svcs., Covance Labs.
Robert Bever, VP/Dir. of
Research, Bode Technology

Alan Christensen, Assoc. Prof.,
GMU Dept. of Microbiology &
Molecular Biology
Mary Elsesser,
Dir., PWC Economic Dev.
Karen Evans,
Marketing Mgr., MediaTech, Inc.
Richard Lewis, CEO, Access Bio
Kevin Moses, Assoc. Dir./Sci. &
Train., Howard Hughes Med. Inst.
Lawrence Nemerow, Biotech. Ctr.
Coord., Osbourn Park HS
Joan Ozdogan, Career Exp. Spec.,
FCPS Chantilly Academy
Ken Peters,
Pres./CEO, GlobalEmed, LLC
Leslie Platt, Counsel, Pillsbury,
Winthrop, Shaw & Pittman
Nathaniel White,
Dir., VA Equine Center
Denise Wingfield,
Independent Sci. Research
Teacher, Dominion HS

Business Management

Ellen Craft, HRM Mgr, Price
Waterhouse Coopers, LLP
Doris Johnson,
Defense Intelligence Agency
Edward Lewis,
Pres., ETL Associates
Barbara Lippa, Dir., Fairfax Co.
Planning Commission
Robin Long, Financial Reporting
Analyst, Exxon/Mobil
Rodney Lusk, Board Chairman,
Leadership Fairfax, Inc.
Cathie Murensky,
Ph.D., Booz Allen Hamilton
Edward Pencek, Owner, Burke
Racquet & Swim Club
Paul Tchorni, VP, HR, Eastern
Region, Marriott Int'l, Inc.

Communication Design

John Anderson, Mgr., Publication
Design, The Society for Human
Resource Mgt.
Jacqueline Gage,
Art Dir., RCN Corp.
Deborah O'Keefe,
Dir. of Comm., The Megas Corp./
Assoc. Dev. Group

Maryam Rostamian,
Art Dir., Potomac Books, Inc.
Amy Saccone,
Pres., AS Graphics, Inc. Computer
& Electronics Technology
Rashaan Williams,
Web Designer/Developer, RCW
Communication Design Inc.
Devin Yates,
Webmaster/Communications
Spec., AIM, Inc.

Computer & Electronics Technology

James Cullen, Dir., Systems &
Tech., Northrop Grumman
Mark Kanawati,
VP, Space Quest, Ltd.
Carl Pearson, Maintenance Mgr.,
U.S. Postal Service
Sayed Qadri,
Ph.D., Chief Engineer/Scientist,
Naval Research Laboratory
Munzer Quaddourah,
Gen. Sales Mgr., Cox Media
David Sayen, Special Sys.
Designer, Big Sky Inc.

Construction Management Technology

Osmund Belcher,
Pres., Belstar Inc.
Jeff Donohoe, Dir., Bus. Dev.,
Donohoe Constr. Co.
James Ruddell, VP, Parsons
Brinckerhoff Constr. Svcs.
Neil Schulman, VP, Orr Company
Dragan Stojanovich,
VP, Norair Engineering Corp.

Contract Management

John Krieger, Prof. Contract Mgt.,
Exe. Dept. of Defense Sys. Mgt.
College, Defense Acq. Univ.
John McElhenny, III,
Dir., Performance Learning,
Defense Acq. Univ.
Eric Payne, Pres., Public
Procurement Solutions
Lisa Schneider, Prof. of Contract
Mgt., Defense Acq. Univ.
Leroy Smith, Principal, Acq.
Innovations Group, Interactive
Tech. Group, Inc.
Michael Wooten, Spec. Asst. to
the Pres., Defense Acq. Univ.

Diesel Mechanics Technology

Cecil Cording,
Fleet Manager, Gate Gourmet
Gary Guinte, Training Mgr.,
Cummins Power Sys., Inc.
Jim Helmick,
Service Mgr., New Baltimore Garage
Sean Miller, Maintenance Train.
Mgr., Veolia Transportation
Karl Quinn,
Mgr., Alban Tractor Co., Inc.
Jim Stepahin,
Exe. Dir., Heavy Construction
Contractors Assoc. of NV
Gary Trainum, Service Mgr.,
Western Branch Diesel, Inc.
Harlin Wrenn, Coord., Diesel Tech.
Program, SVCC

Early Childhood Development

Rosemary Burton,
Ph.D., Dir. of Ops., Minnieland
Private Day School, Inc.
Sherry Chevalley,
Adjunct Faculty, NOVA
Elisabeth Closter,
Child Care Spec./Field Supr.,
Family Day Care of No. VA
Karen Hughes, President/CEO,
The Campagna Center
Elise Jepson-Green,
Coord., Children's Programs,
Loudoun Co. PRCSr
Rosemary Kendall, Ph.D., Parent
Educator, Prog. Spec., FCPS
Susan Waterman,
Child Care Spec., Infant & Toddler
Family Day Care

Engineering Technology

John Baer, IMEC
Dave Bettwy, IMEC
Bernie Brien,
Aerospace Engr., Aerojet
James Childs, Pres., JJCA, Inc.
James Cole, Dept. of Defense
Adrian Fremont,
Spec. Proj. Engr., City of Fairfax
Ronald Nicholson,
Dist. Struct./Bridge Engr.,
VDOT Streets & Bridges
David Payne,
Soils Engr., VDOT

Fine Arts

Suzanne Rosenblum Guardia,
Education Dir., Greater Reston
Arts Ctr.
Anna Lippert, Gallery Dir., Center
for the Arts/Greater Manassas
Rosemary Luckett,
Second River Studio
Jeffrey Meizlik, Sculptor
Trudi Van Dyke,
Arts Management Consultant

Fire Science Technology

Brett Bowman,
Battalion Chief, Pr. Wm. Co. Dept.
of Fire & Rescue
Maurice Jones,
Mgr., Alexandria Fire Dept.
James Milke,
P.E., Asst. Prof., UMD Dept. of Fire
Protection Engineering
W. G. Shelton, Jr.,
VA Dept. of Fire Programs
Mark Wheatley, Asst. Chief,
Fairfax Co. Fire & Rescue Dept.

Fitness

Brenda Johnson,
PhD, Prog. Mgr., Club Svcs.,
America on Line @ Dulles
Tamer Moumen,
Genl. Mgr., Life Time Fitness, Inc.
Liane Summerfield,
Assoc. Dean, School of Health
Professions, Marymount Univ.
Douglas Vasiliadis,
Pres., One To One Fitness, Inc.

Geographic Information Systems

Sergei Adronikov,
Ph.D., GIS & MBA Programs, GMU
Ken Bassett,
Dir. Social Studies/Geography,
PWCS
Peter Black,
GIS, Environmental Defense
Timothy Boucher,
Spatial Scientist, Global Priorities
Group, the Nature Conservancy
Jay Brunkov,
Fed. Prog., Dewberry & Davis, LLC
David Clark, Ph.D., Loudoun
Archeological Foundation, Prof. of
Anthro., Catholic U.
Pedro Flores,
GIS Outreach Dir., Nat'l. Assn of
Counties

Thomas Leach, VP, Div. Mgr., Spatial Tech., SAIC, Inc.
Rick Mueller, Head, Spatial Anan. Research Station, USDA/Nat'l. Agri. Stat. Svcs.
David Paschane, Ph.D. Supervisory Mgmt. Spec., U.S. Vet. Admin.
Roberta Pense, Ch., Geospatial Info. Branch, USDA/Nat'l. Agri. Stat. Svcs.
Kathryn Prescott, GIS Div. Ch., PWC Office of Info. Tech.

F. Harold Smith, Ph.D., Ch. Scientist, Nat'l. Geospatial, Intel. Agency
Mike Smith, HR, SPADAC
Larry Stipek, Dir., Loudoun Co. Off. of Mapping & Geographic Info.
Phil Theil, Ph.D., Dewberry & Davis, LLC
Thomas Thorpe, Sr. Geospatial Analyst, Nat. Geospatial Intel. Agency
Mohan Venigalla, Ph.D., Asst. Prof., Civil, Environ. & Infrastructure Engr., GMU

Historic Preservation

David Boyce, Oatlands Plantation
Harry Butowsky, Ph.D., National Park Svc.
David Clark, Ph.D., Catholic Univ. of America
Phyllis Cook-Taylor, Friends of the Slave Quarters Committee
David Edwards, VA Dept. of Historic Resources
Rich Gillespie, Mosby Heritage Area
Tracy Gillespie, Morven Park
Mike Henry, Colvin Run Mill
Anne Horstman, G. C. Marshall International Ctr.
Mike Leventhal, Arlington Co. Dept. of Community Planning
Jeanne Niccolls, Fx. Co. Park Authority
Melanie Pomeroy, Avebury World Heritage Site (UK)
Constance Werner Ramirez, Ph.D., NPS Federal Preservation Inst.
Joan Rokus, National Rec. & Parks Assoc.

Lyle Rosenberger, Bucks Co. Comm. Col. (PA)
Dana Shoaf, Editor, America's Civil War; NOVA Adjunct Faculty
Heidi Siebentritt, Loudoun Co. Dept. of Planning
John Sprinkle, Ph.D., Nat'l Park Svcs.
Angela Stokes, The Journey Through Hallowed Ground.
Jack Walter, Esq., Heritage Development Consultant
Su Webb, Times Community Newspapers

Horticulture Technology

Terri Aufmuth, Landscape Designer
Deborah Chaves, Instructor, C.S. Monroe Tech. Ctr.
Ron Cloer, Owner, Gold Cup Designs
Debbie Dillon, Landscape Ext. Agent, Loudoun Co. Ext. Svc.
Jeff Minnich, Owner, Garden Design Inc.
Keith Tomlinson, Mgr., Meadowlark Botanical Gardens
Scott Tomlinson, C.L.T., Supv., for Hort. Svcs., Rolling Greens, Inc.

Hospitality Management

Mark Bloomquist, VP & Dir. of Merchandising, Alliance Atlantic Foods
Tom Burgess, RD, Nutrition Svcs. Dir., No. VA Training Ctr.
Michael Garcia, Operating Partner, Fleming's
Mahmood Khan, Dir., HTM, Va. Tech., No. VA Ctr.
Jim Wordsworth, Pres., J.R.'s Good Times, Inc.

Information Systems Technology

Sridhar Amudhanar, Pres., Maxys Corp.
Thomas Edwards, Regional Manager, Navy Mutual Aid Assoc.
Richard Forno, Visiting Scientist, The Software Institute of Melon Univ.
Craig Goheen, Prog. Mgr., General Dynamics
Donal Hogan, Bus. Dev. ISR-IE PDC, Gen'l. Dynamics Adv. Info. Sys.

Srinivasa Kasturi, Info. Sec. Life Cycle Spec., Banyan Logic
Paul Kurtz, Exec. Dir., Cyber Security Industry Alliance
Fred Livengood, Asst. Mgr., Fairfax Field Office, Va. Employment Comm.
Ingrid Peterson, Sr. Fin. Analyst/Adv. Comm. Engr., Elect. Data Sys. Corp.
Satyam Priyadarshy, Ph.D., Chief Knowledge Off., Network Solutions, LLC
Ajoy Singh, Sr. Mgr., Client Applications, Online Resources Corp.
Michael Weinberger, Mgr., Proposal Group, Federal Network Systems (Verizon)

Interior Design

Vincent Carter, NCIDQ, ASID, Principal, Vincent G. Carter Assoc., Inc.
Ginny Dyson, IIDA, LEED AP BD+C, Assoc. Principal, Sustainability Spec., Nat'l. Capitol Off., AECOM
Donna Hobson, Another Image
Allison Mann, Allied Member ASID, Proj. Designer, Burch Builders Group, LLC
Donna Ralston-Latham, FIFDA/ASID, Designer, DRL Total Environments
Gretchen Rhodes, Quinn Interiors
Kay Sargent, IIDA, CID, LEED, AP, IA Interior Architects
Skip Sroka, Principal, Sroka Designs, Inc.

Marketing/eCommerce

Debbie Capp, Dir. of Advertising, Merrifield Garden Ctr.
Jessica Clark, VP Marketing & Customer Operations, Care Free Boats
Dixie Eng, Gen. Mgr., Best Western Capitol Skyline Hotel
Carole Heil, President, The Neely Group
Ferris Kaplan, Marketing Dir., The Taubman Co.
Dorsey Lilley, HR Dir., Saks Fifth Avenue
Lisa Martin, Pres., Leapfrog Solutions, Inc.

Jennifer R. Morgan,
Customer Relations, The Boeing Company

Joan Smith Sahlgren,
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Curriculum Codes

Degree-Seeking Students – Select your major field of study from the following list. Place the curriculum code of your choice in #21 on the Application for Admission form.

Codes	Associate of Arts:	6361	Early Childhood Development/ Paraprofessional	221-909-01	Automotive Maintenance and Light Repair
5290	Fine Arts	9680	Engineering Technology	221-149-01	Biotechnology Lab Technician
6480	Liberal Arts	9681	Engineering Technology/ Civil Engineering Technology	221-212-15	Business Information Technology*
6489	Liberal Arts/Art History	9682	Engineering Technology/Drafting	221-212-04	Business Management Principles
6486	Liberal Arts/International Studies	9683	Engineering Technology/ Mechanical Engineering Technology	221-648-02	Chinese Studies
648B	Liberal Arts/Psychology	4270	Fire Science Technology	221-909-10	Collision Repair Technology
6482	Liberal Arts/Speech Communication	3350	Horticulture Technology	221-729-01	Computer Aided Drafting and Design*
5550	Music	3353	Horticulture Technology/Landscape Design	221-917-01	Construction Supervision
	Associate of Science:	7750	Hospitality Management	221-299-11	Database Specialist*
2130	Business Administration	7751	Hospitality Management/ Food Service Management	221-299-04	Desktop Publishing
2460	Computer Science	7752	Hospitality Management/ Hotel Management	221-920-02	Diesel Mechanics Technology
8310	Engineering	7753	Hospitality Management/ Nutrition Management	221-882-01	Drivers Education*
8311	Engineering/Electrical Engineering	2990	Information Systems Technology	221-636-04	Early Childhood Development
6990	General Studies	5200	Interior Design	221-251-01	eCommerce
6993	General Studies/ Recreation, Parks, and Leisure Studies	2510	Marketing	221-514-23	Electronic Media in Design, Rendering, and Animation
3400	Information Technology	2513	Marketing/eCommerce	221-212-10	Entrepreneurship
8800	Science	2514	Marketing/International Marketing	221-146-01	Emergency Medical Technician-Basic*
8802	Science/Mathematics	2515	Marketing/Public Relations	221-460-01	Fitness*
8820	Social Sciences A.S.	2600	Paralegal Studies	221-405-45	Forensic Investigation (Advanced)
8823	Social Sciences/Deaf Studies	5020	Photography	221-405-43	Forensic Investigation (General)
8824	Social Sciences/Political Science			221-719-71	Geographic Information Systems (GIS)
8821	Social Sciences/Psychology			221-648-03	Historic Preservation
8822	Social Sciences/Teacher Education			221-636-06	Infant and Toddler Care
	Associate of Applied Arts:	Codes	Certificate:	221-212-16	Information Processing*
5300	Fine Arts	4060	Administration of Justice	221-212-17	International Business
5301	Fine Arts/Photography	9030	Air Conditioning and Refrigeration	221-299-09	IT Technical Support*
5590	Music	9300	Architectural Drafting	221-648-04	Japanese Studies
5591	Music/Jazz/Popular Music	9100	Automotive Emissions	221-915-01	Land Planning, Survey, and Development
	Associate of Applied Science:	9840	Automotive Electrical Technician	221-648-05	Latin American Studies
2030	Accounting	2040	Bookkeeping	221-212-13	Leadership Development
4000	Administration of Justice	2500	Contract Management	221-251-02	Marketing
9040	Air Conditioning and Refrigeration	2450	Culinary Arts	221-179-01	Massage Therapy
6400	American Sign Language to English Interpretation	6320	Early Childhood Development	221-732-01	Network Administration
9010	Architecture Technology	9250	Electronics Technician	221-732-04	Network Engineering (Specialist)
9090	Automotive Technology	2410	Food Service Management	221-732-09	Network Security
9091	Automotive Technology/Emissions	2400	Hotel Management	221-460-20	Outdoor Recreation and Resource Management
1490	Biotechnology	2670	Meeting, Event, and Exhibition Management	221-629-03	Paraprofessional Teacher Assistant
2120	Business Management	2970	Multimedia Design	221-251-03	Promotion and Public Relations
2124	Business Management/ Administrative Support Technology	5570	Music Recording Technology	221-273-02	Real Estate Residential Appraisal
2123	Business Management/Finance	2650	Professional Writing for Business, Government, and Industry	221-273-03	Real Estate Brokerage
2125	Business Management/ Healthcare Administration Specialization	2730	Real Estate Brokerage	221-460-30	Recreation Programming and Administration
2121	Business Management/International Business	2320	Small Business Management	221-251-04	Retail Management
2122	Business Management/Public Management	4030	Substance Abuse Rehabilitation Counselor	221-400-02	Security Management
5110	Communication Design	2430	Travel and Tourism	221-529-02	Theatre
5113	Communication Design/Interactive Design	Codes	Career Studies Certificate:	221-249-02	Tour Guiding
7310	Computer and Electronics Technology	221-203-02	Accounting	221-352-03	Web Design and Development
9170	Construction Management Technology	221-648-01	African-American Studies	221-352-02	Web Design Specialist
2480	Contract Management	221-903-10	Air Conditioning and Refrigeration	221-995-01	Welding/Basic Techniques
6360	Early Childhood Development	221-640-01	American Sign Language	221-298-13	Word Processing*
		221-640-03	American Sign Language Interpreting		
		221-299-06	Application Programming*		

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 in #21 on the Application for Admission.

Codes	Associate of Applied Science:	1560	Nursing + Nursing A.S./ General Studies (MOMENTUM 2+1)	221-146-03	Emergency Medical Technician-Intermediate
1180	Dental Hygiene	1800	Physical Therapist Assistant	221-172-04	Magnetic Resonance Imaging*
1090	Diagnostic Medical Sonography	1720	Radiography	221-286-01	Medical Transcription
1091	Diagnostic Medical Sonography/ Echocardiography Specialization	1810	Respiratory Therapy	221-146-05	Paramedic
1092	Diagnostic Medical Sonography/ Vascular Sonography Specialization	1880	Veterinary Technology	221-151-02	Phlebotomy*
1460	Emergency Medical Services	Codes	Career Studies Certificate:		
1520	Health Information Management	221-152-01	Clinical Data Coding		
1510	Medical Laboratory Technology	221-172-02	Computed Tomography*		

*Plan is under 16 credits and not eligible for Financial Aid. Please make sure that your selected program is offered at a campus you can attend.

CURRICULA – CAMPUS AND ELI LOCATIONS

The following list shows the curricula offered on each NOVA campus and by the Extended Learning Institute (ELI). Except for the more specialized Medical Education Campus, all general education, orientation, and physical education course requirements for a degree or certificate can be met on any College campus or by ELI. All graduation requirements are certified by the student's campus of record. Specialized major courses required for some degree curricula are not offered on all campuses or ELI. Those campuses and ELI offering the courses required for a given degree or certificate are noted in the right-hand columns. The symbols are AL – Alexandria, AN – Annandale, LO – Loudoun, MA – Manassas, MEC – Medical Education Campus, WO – Woodbridge, and ELI – Extended Learning Institute.

	AL	AN	LO	MA	MEC	WO	ELI
Accounting A.A.S.	•	•	•	•		•	•
Accounting Career Studies Certificate	•	•	•	•		•	•
Bookkeeping Certificate	•	•	•	•		•	•
Administration of Justice A.A.S.		•		•		•	
Administration of Justice Certificate		•		•		•	
General Forensic Investigation Career Studies Certificate		•		•		•	
Advanced Forensic Investigation Career Studies Certificate		•		•		•	
Security Management Career Studies Certificate		•		•		•	
Air Conditioning and Refrigeration A.A.S.						•	
Air Conditioning and Refrigeration Certificate						•	
Air Conditioning and Refrigeration Career Studies Certificate						•	
American Sign Language to English Interpretation A.A.S.		•					
American Sign Language Career Studies Certificate		•					
American Sign Language Interpreting Career Studies Certificate		•					
Architecture Technology A.A.S.	•	•					
Architectural Drafting Certificate	•	•					
Automotive Technology A.A.S.	•			•			
Emissions Specialization	•			•			
Automotive Emissions Certificate	•			•			
Automotive Electrical Technician Certificate	•			•			
Automotive Maintenance and Light Repair Career Studies Certificate	•						
Collision Repair Technology Career Studies Certificate	•						
Diesel Mechanics Technology Career Studies Certificate				•			
Biotechnology A.A.S.			•	•			
Biotechnology Lab Technician Career Studies Certificate			•	•			
Business Administration A.S.	•	•	•	•		•	•
Business Management A.A.S.	•	•	•	•		•	•
Administrative Support Technology Specialization	•					•	•
Finance Specialization	•	•	•	•		•	
Healthcare Administration Specialization	•	•	•	•		•	
International Business Specialization	•	•	•				
Public Management Specialization						•	
Small Business Management Certificate	•	•	•	•		•	•
Business Information Technology Career Studies Certificate	•	•	•	•		•	•
Business Management Principles Career Studies Certificate		•				•	•
Desktop Publishing Career Studies Certificate	•					•	•

	AL	AN	LO	MA	MEC	WO	ELI
Entrepreneurship Career Studies Certificate	•						
Information Processing Career Studies Certificate	•					•	
International Business Career Studies Certificate	•	•	•				
Leadership Development Career Studies Certificate	•	•	•	•		•	•
Word Processing Career Studies Certificate	•					•	
Communication Design A.A.S.	•		•				
Interactive Design Specialization	•						
Multimedia Design Certificate			•				
Web Design Specialist Career Studies Certificate	•		•				
Computer and Electronics Technology A.A.S.		•					
Electronics Technician Certificate		•					
Computer Science A.S.	•	•	•	•		•	
Construction Management Technology A.A.S.	•						
Construction Supervision Career Studies Certificate	•						
Contract Management A.A.S.	•					•	
Contract Management Certificate	•					•	
Dental Hygiene A.A.S.					•		
Diagnostic Medical Sonography A.A.S.					•		
Echocardiography Specialization					•		
Vascular Sonography Specialization					•		
Drivers Education Career Studies Certificate				•			
Early Childhood Development A.A.S.	•		•	•			
Paraprofessional Specialization	•		•	•			
Early Childhood Development Certificate	•		•	•			
Early Childhood Development Career Studies Certificate	•		•	•			
Infant and Toddler Care Career Studies Certificate	•		•	•			
Paraprofessional Teacher Assistant Career Studies Certificate	•		•	•			
Emergency Medical Services A.A.S.					•		
Emergency Medical Technician-Basic Career Studies Certificate					•		
Emergency Medical Technician-Intermediate Career Studies Certificate					•		
Paramedic Career Studies Certificate					•		
Engineering A.S.		•					
Electrical Engineering Specialization		•					
Engineering Technology A.A.S.	•	•					
Civil Engineering Technology Specialization	•						
Drafting Specialization	•	•					
Mechanical Engineering Technology Specialization		•					
Engineering Drafting Certificate	•	•					
Computer Aided Drafting and Design Career Studies Certificate	•	•					
Electronic Media in Design Rendering and Animation Career Studies Certificate	•						
Land Planning, Survey and Development Career Studies Certificate	•						
Fine Arts A.A.	•	•	•	•		•	
Fine Arts A.A.A.	•	•	•	•		•	
Photography Specialization	•					•	

	AL	AN	LO	MA	MEC	WO	ELI
Fire Science Technology A.A.S.		•					
Fitness Career Studies Certificate	•	•	•	•		•	
General Studies A.S.	•	•	•	•		•	•
Recreation, Parks and Leisure Studies Specialization		•					
Outdoor Recreation & Resource Management Career Studies Certificate		•					
Recreation Programming and Administration Career Studies Certificate		•					
Geographic Information Systems Career Studies Certificate			•				
Health Information Management A.A.S.					•		
Clinical Data Coding Career Studies Certificate					•		
Medical Transcription Career Studies Certificate					•		
Historic Preservation Career Studies Certificate			•				
Horticulture Technology A.A.S.			•				
Landscape Design Specialization			•				
Hospitality Management A.A.S.		•					
Food Service Management Specialization		•					
Hotel Management Specialization		•					
Nutrition Management Specialization		•					
Culinary Arts Certificate		•					
Food Service Management Certificate		•					
Hotel Management Certificate		•					
Meeting, Event and Exhibition Management Certificate		•					
Information Technology A.S.	•	•	•	•		•	•
Information Systems Technology A.A.S.	•	•	•	•		•	
Application Programming Career Studies Certificate	•		•	•			•
Database Specialist Career Studies Certificate	•			•		•	
IT Technical Support Career Studies Certificate		•				•	
Linux Programming and Development Career Studies Certificate	•						
Network Administration Career Studies Certificate	•	•	•	•		•	•
Network Engineering (Specialist) Career Studies Certificate		•				•	
Network Security Career Studies Certificate	•					•	
Web Design and Development Career Studies Certificate	•	•		•		•	
Interior Design A.A.S.			•				
Liberal Arts A.A.	•	•	•	•		•	•
Art History Specialization	•	•	•	•		•	
International Studies Specialization	•	•	•	•		•	•
Psychology Specialization	•	•	•	•		•	
Speech Communication Specialization	•	•	•	•		•	
African-American Studies Career Studies Certificate	•						
Chinese Studies Career Studies Certificate	•						
Japanese Studies Career Studies Certificate	•						
Latin American Studies Career Studies Certificate	•						
Theatre Career Studies Certificate	•	•	•	•		•	

CURRICULUM LOCATIONS

	AL	AN	LO	MA	MEC	WO	ELI
Marketing A.A.S.		•					
eCommerce Specialization		•					
International Marketing Specialization		•					
Public Relations Specialization		•					
eCommerce Career Studies Certificate		•					
Marketing Career Studies Certificate		•					
Promotion and Public Relations Career Studies Certificate		•					
Retail Management Career Studies Certificate		•					
Massage Therapy Career Studies Certificate					•	•	
Medical Laboratory Technology A.A.S.					•		
Music A.A.	•	•	•				
Music A.A.A.	•	•	•				
Jazz/Popular Music Specialization	•	•	•				
Music Recording Technology Certificate			•				
Nursing A.A.S.					•		
Nursing A.A.S. + Nursing A.S./General Studies (MOMENTUM 2 + 1)					•		
Paralegal Studies A.A.S.	•						
Phlebotomy Career Studies Certificate					•		
Photography A.A.S.	•						
Physical Therapist Assistant A.A.S.					•		
Professional Writing for Business, Government and Industry Certificate	•	•	•	•		•	
Radiography A.A.S.					•		
Radiation Oncology Certificate					•		
Computed Tomography Career Studies Certificate					•		
Magnetic Resonance Imaging Career Studies Certificate					•		
Real Estate Brokerage Certificate		•					
Real Estate Brokerage Career Studies Certificate		•					
Real Estate Residential Appraisal Career Studies Certificate		•					
Respiratory Therapy A.A.S.					•		
Science A.S.	•	•	•	•		•	•
Mathematics Specialization	•	•	•	•		•	•
Social Sciences A.S.	•	•	•	•		•	•
Deaf Studies Specialization		•					
Political Science Specialization	•						
Psychology Specialization	•	•	•	•		•	
Teacher Education Specialization	•	•	•	•		•	
Substance Abuse Rehabilitation Counselor Certificate	•						
Travel and Tourism Certificate		•					
Tour Guiding Career Studies Certificate		•					
Veterinary Technology A.A.S.			•				
Welding: Basic Techniques Career Studies Certificate				•			