

Northern Virginia Community College 2008-2009 Catalog

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 |
| SDV | Elective | 1 |
| ¹ ___ | Social Science Elective | <u>3</u> |
| | Total | 18 |
| 2nd Semester | | |
| ² 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 | <u>5</u> |
| | Total | 17 |
| 3rd Semester | | |
| EGR | 240 Solid Mechanics (Statics) | 3 |
| MTH | 277 Vector Calculus | 4 |
| ⁴ PED/RPK | | 1 |
| ¹ ___ | Social Science Elective | 3 |
| ⁵ SPD | Elective | <u>3</u> |
| | Total | 14 |
| 4th Semester | | |
| ⁶ EGR | Elective | 2-3 |
| EGR | 245 Engineering Mechanics - Dynamics | 3 |
| ⁷ EGR | 246 Mechanics of Materials | 3 |
| ⁸ ___ | Humanities/Fine Arts Elective | 3 |
| PHY | 232 General University Physics II | <u>5</u> |
| | Total | 16-17 |

Total credits for the A.S. Degree in Engineering = 65-66.

¹ Must include one semester of history (American or Western Civilization) plus a second semester of history, economics, psychology, or sociology.

² CSC 201 should be substituted for EGR 126 for transfer to GMU.

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

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ENGINEERING A.S.

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

⁶ EGR 206 (2 credits) required at Va. Tech and desirable elsewhere.

⁷ EGR 251 can be substituted for EGR 246.

⁸ 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.

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 |
| ⁶ EGR | Elective | 2-3 |
| MTH | 285 Linear Algebra | 3 |
| MTH | 291 Differential Equations | 3 |
| ⁹ MTH | 292 Topics in Differential Equations | 3 |

⁹ MTH 292 not recommended for students who plan to transfer to GMU.