

Mathematics and Physical Science – Pre-Engineering Option

(Note: Program requirements for this degree are offered on NOC Tonkawa campus only.)

PROGRAM REQUIREMENTS

| | Credit Hours |
|--|--------------|
| GENERAL EDUCATION | 37 |
| ENGLISH COMPOSITION | |
| ENGL 1113 English Composition I | 3 |
| ENGL 1213 English Composition II | 3 |
| HISTORY AND GOVERNMENT | |
| HIST 1483 American History to 1877 (or) | |
| HIST 1493 Am. History Since 1877 | 3 |
| POLI 1113 American Government | 3 |
| HUMANITIES | |
| Electives | 6 |
| One 3-hour course to be chosen from those listed with International Dimension and 3 hours of humanities electives. | |
| MATHEMATICS | |
| MATH 1513 College Algebra* | 3 |
| SCIENCE | |
| CHEM 1314 General Chemistry I | 4 |
| CHEM 1414 General Chemistry II | 4 |
| COMPUTER SCIENCE | |
| CS 1013 Visual BASIC | 3 |
| (or other approved computer class) | |
| ORIENTATION | |
| ORNT 1101 Freshman Orientation | 1 |
| GENERAL EDUCATION ELECTIVES | 4 |
| (3 of 4 hours for these electives are designated for MATH 1613 Plane Trigonometry; 1 hour can be combined with requirement for recommended electives below, or selected from courses in Language Arts, Natural Science, Foreign Languages, Fine Arts, Humanities, Mathematics, Behavioral or Social Sciences.) | |

| | |
|--|----|
| PROGRAM REQUIREMENTS | 18 |
| **MATH 2145 Calculus I | 5 |
| **MATH 2155 Calculus II | 5 |
| **PHYS 2014 Engineering Physics I | 4 |
| **PHYS 2114 Engineering Physics II | 4 |

| | |
|--|---|
| RECOMMENDED PROGRAM ELECTIVES | 6 |
| **ENGR 2113 Statics | 3 |
| **ENGR 2443 Thermodynamics | 3 |
| **MATH 2613 Differential Equations | 3 |

TOTAL CREDIT HOURS

61
* Students scoring 26 or above on the math subsection of the ACT do not have to take MATH 1513 College Algebra.

*Students scoring 28 or above on the math subsection of the ACT do not have to take MATH 1613 Plane Trigonometry.

*Students not taking Algebra and Trigonometry because of ACT scores or CLEP exam results are required to substitute 3-6 hours of credit in appropriate General Education Electives or RECOMMENDED PROGRAM ELECTIVES to complete 60 hours at NOC and maximize their transfer hours to the four-year institution.

SUGGESTED COURSE SEQUENCE

| | Credit Hours |
|--|--------------|
| FIRST SEMESTER | 14 |
| ENGL 1113 English Composition I | 3 |
| ORNT 1101 Freshman Orientation | 1 |
| CHEM 1314 General Chemistry I | 4 |
| MATH 1513 College Algebra (Pre-Calculus) | 3 |
| MATH 1613 Plane Trig | 3 |
| SECOND SEMESTER | 16 |
| ENGL 1213 English Composition II | 3 |
| MATH 2145 Calculus I | 5 |
| PHYS 2014 Engineering Physics I | 4 |
| CHEM 1414 General Chemistry II | 4 |
| THIRD SEMESTER | 15 |
| HIST 1483 American History to 1877 (or) | |
| HIST 1493 American History Since 1877 | 3 |
| ENGR 2443 Thermodynamics | 3 |
| MATH 2155 Calculus II | 5 |
| PHYS 2114 Engineering Physics II | 4 |
| FOURTH SEMESTER | 15 |
| POLI 1113 American Government | 3 |
| ENGR 2113 Statics (or) | |
| MATH 2613 Differential Equations | 3 |
| Humanities Elective | 3 |
| Humanities Elective | 3 |
| CS 1013 Visual BASIC | 3 |

Students need to consult with the engineering school of interest for Chemistry and Biology requirements.

This is a suggested sequence timeline only. A student may require more than four semesters to complete this Associate in Science degree.

**These program courses are typically offered only once a year. See course descriptions for fall or spring designations and plan accordingly.

The Pre-Engineering degree option is designed to transfer into all disciplines of engineering. It is important to secure a catalog from the engineering school for transfer so you may select the courses to meet the requirements needed to obtain the bachelor's degree you choose. The program features small class size and individual attention for this challenging degree.

Career Opportunities

- Architect/Designer
- Chemical Engineer
- Civil Engineer
- Electrical Engineer
- Mechanical Engineer
- Metallurgical Engineer
- Petroleum Engineer

NOC evaluates students for placement into either foundational or college-level courses, whichever will lead to the greatest possibility of student success. Academic placement is determined either by ACT test scores or by Accuplacer test scores. These tests are administered in the Testing Center at NOC. Based upon the scores, students may be required to take one or more courses for remediation in English, Math, or Reading, either prior to or concurrent with credit courses. See the NOC testing web page at <http://www.noc.edu/act> for placement guidelines.