

Mathematics and Physical Science - Pre-Engineering Option N Associate in Science Degree

Division of Engineering, Physical Science & PTEC

Life changing.

This degree is offered on NOC Enid and NOC Tonkawa campuses.

| Program Requirements 60 Total Credit Hours | | | | | | | | | |
|---|--|------|----------------------------------|---|---|-----------|---------|------------------------------|---------|
| General Education Courses 37 Total Credit Hours | | | | | Pro | 19 hours | | | |
| English Composition Courses | | | | | | MATH | 1613 | Plane Trigonometry | 3 hours |
| | ENGL | 1113 | English Composition I | 3 hours | ** | MATH | 2144 | Calculus I | 4 hours |
| | ENGL | 1213 | English Composition II | 3 hours | ** | MATH | 2154 | Calculus II | 4 hours |
| History & Government Courses | | | | | ** | MATH | 2164 | Calculus III | 4 hours |
| | HIST | 1483 | American History to 1877 | 3 hours | ** | PHYS | 2114 | Engineering Physics II | 4 hours |
| or | HIST | 1493 | American History Since 187 | 7 | | | | | |
| | POLI | 1113 | American Government | 3 hours | | | | | |
| Humanities Courses | | | | | | | | | |
| | Elective | s | | 6 hours | Re | 4 hours | | | |
| | | | be chosen from those listed with | | (Co | mbine wit | h Gen E | Ed. Hours to choose 7 hours) | |
| Inte | International Dimension and 3 hours of humanities electives. | | | | | ENGL | 1223 | Technical Writing | 3 hours |
| Ma | Mathematics Courses | | | | | ENGR | 1111 | Intro to Engineering | 1 hour |
| | MATH | 1513 | Algebra for STEM | 3 hours | ** | ENGR | 2113 | Statics | 3 hours |
| Science Courses | | | ** | ENGR | 2123 | Dynamics | 3 hours | | |
| * | CHEM | 1515 | Chemistry for Engineers | 5 hours | ** | ENGR | 2443 | Thermodynamics | 3 hours |
| | PHYS | 2014 | Engineering Physics I | 4 hours | ** | MATH | 2163 | Differential Equations | 3 hours |
| Computer Science Courses | | | | | | BIOL | 1114 | General Biology | 4 hours |
| | CMSC | 1013 | Visual Basics | 3 hours | | PHIL | 2223 | Business Ethics | 3 hours |
| or | CMSC | 2203 | Python | | | | | | |
| or | CMSC | 2303 | Java | | | | | | |
| | CMSC | 2313 | <u>C</u> :::: | | | | | | |
| Orientation Course | | | | * CHEM 1315 and CHEM 1414 can be substituted for CHEM 1515. | | | | | |
| | ORNT | 1101 | Freshman Orientation | 1 hour | Ton | kawa -CHI | EM 1515 | offered Fall only | |
| General Education Elective Course 3 hours | | | | Enid - CHEM 1515 offered Spring only | | | | | |
| Select courses from: Language Arts, Natural Sciences, Foreign | | | | **These program courses are typically offered only once a year. | | | | | |
| | Languages, Fine Arts, Humanities, Mathematics, Behavioral or Social Sciences | | | | See course descriptions for fall or spring designations and plan accordingly. | | | | |
| Social Sciences | | | | acc | orunigiy. | | | | |

Students scoring 26 or above on the math subsection of the ACT do not have to take MATH 1513 Algebra for STEM. Students scoring 28 or above on the math subsection of the ACT o not have to take MATH 1613 Plane Trigonometry. Students not taking Algebra & 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.

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 to transfer so you may select the courses to meet the requirements needed to obtain the bachelor's degree your choose. The program features small class size and individual attention for this challenging degree.

Career Opportunities: Architect/Designer, Aerospace, Agriculture, Biosystems Engineer, Chemical Engineer, Construction Technology, Civil Engineer, Electrical Engineer, Environmental Engineer, Mechanical Engineer, Meteorology, Metallurgical Engineer, Petroleum Engineer

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This suggested curriculum includes degree requirements and courses that are usually completed in the first two years of a four-year curriculum. Consult with the university or college of your choice and its catalog curriculum as you make plans on where to transfer. Be careful to select the courses that will meet all requirements for both the Associate and Baccalaureate degree programs.

| Year One | | | | | | |
|------------------------|------|--|-------|-----------------------|-----------------------------|--|
| Fall Semester | | | | Spring Semester | | |
| ENGL | 1113 | English Composition I | ENGL | 1213 | English Composition II | |
| ENGR | 1111 | Introduction to Engineering | HIST | 1483 | American History to 1877 | |
| CHEM | 1515 | Chemistry for Engineers | or | | | |
| ORNT | 1101 | Freshman Orientation | HIST | 1493 | American History Since 1877 | |
| **MATH | 1513 | Algebra for STEM -If ACT score requires it | *MATH | 2144 | Calculus I | |
| | | or Program Elective | *PHYS | 2014 | Engineering Physics I | |
| **MATH | 1613 | Plane Trigonometry | | 3 hours | Computer Science Course | |
| Total: 16 credit hours | | | | Total 17 credit hours | | |

| Year Two | | | | | | |
|-----------------------|---------|------------------------|-------|-----------------------|-------------------------|--|
| Fall Semester | | | | Spring Semester | | |
| ENGR | 2443 | Thermodynamics | *MATH | 2164 | Calculus III | |
| PHYS | 2114 | Engineering Physics II | POLI | 1113 | American Government | |
| | 3 hours | Humanities Elective | | Program | n Elective Recommended: | |
| *MATH | 2154 | Calculus II | ENGR | 2113 | Statics | |
| | | | or | | | |
| | | | *MATH | 2613 | Differential Equations | |
| | | | | 3 hours | Humanities Elective | |
| | | | | | | |
| Total 14 credit hours | | | | Total 13 credit hours | | |

Suggested NOC courses for specific engineering disciplines:

ENGR 2123 Dynamics 3 hours

BIOSYSTEMS AGRICULTURAL:

BIOL 2124 Microbiology 4 hours
BIOL 1414 General Zoology 4 hours

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

NOC evaluates students for placement into supplemental/college-level courses or college-level courses, whichever will lead to the greatest possibility of student success. Academic placement is determined by A.C.T. test scores, corresponding A.C.T. challenge tests, holistic placement, or other college approved placement tests. These tests are administered in the Testing Center at NOC. Based upon the scores, students may be required to take one or more supplemental courses for English, Math, Social Science or Nursing. See the NOC testing web page by clicking on the following link: http://www.noc.edu/act for placement guidelines.

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