

MATHEMATICS AND PHYSICAL SCIENCE – PRE-ENGINEERING OPTION

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

At the beginning of each course listing, the four letter abbreviation indicates the department and the four digits indicate the course code used for enrollment. The total course hour value follows each.)

PROGRAM REQUIREMENTS		SUGGESTED COURSE SEQUENCE		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.
	Credit Hours		Credit Hours	
GENERAL EDUCATION COURSES	37 TOTAL HOURS	FIRST SEMESTER	14 TOTAL HOURS	<p>Career Opportunities</p> <ul style="list-style-type: none"> • Architect/Designer • Aerospace • Agriculture • BioSystems Engineer • Chemical Engineer • Construction Technology • Civil Engineer • Electrical Engineer • Environmental Engineer • Environmental Scientist • Mechanical Engineer • Meteorology • Metallurgical Engineer • Petroleum Engineer <p>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 A.C.T. 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 by clicking on the following link: ACT </p>
ENGLISH COMPOSITION COURSES		ENGL 1113 English Composition I	3 hours	
ENGL 1113 English Composition I	3 hours	CHEM 1314 General Chemistry I	4 hours	
ENGL 1213 English Composition II	3 hours	ORNT 1101 Freshman Orientation	1 hour	
HISTORY AND GOVERNMENT COURSES		*MATH 1513 College Algebra (Pre-Calculus)	3 hours	
HIST 1483 American History to 1877 (OR) HIST 1493 American History Since 1877	3 hours	*MATH 1613 Plane Trigonometry	3 hours	
POLI 1113 American Government	3 hours	SECOND SEMESTER	16 TOTAL HOURS	
HUMANITIES COURSES		ENGL 1213 English Composition II	3 hours	
Electives	6 hours	MATH 2145 Calculus I	5 hours	
One 3 hour course to be chosen from those listed with the International Dimension and 3 hours of humanities electives.		PHYS 2014 Engineering Physics	4 hours	
MATHEMATICS COURSES		CHEM 1314 General Chemistry I	4 hours	
*MATH 1513 College Algebra	3 hours	THIRD SEMESTER	15 TOTAL HOURS	
SCIENCE COURSES		HIST 1483 American History to 1877 (OR) HIST 1493 American History Since 1877	3 hours	
CHEM 1314 General Chemistry I	4 hours	ENGR 2443 Thermodynamics	3 hours	
CHEM 1414 General Chemistry II	4 hours	MATH 2155 Calculus II	5 hours	
COMPUTER SCIENCE COURSES		PHYS 2114 Engineering Physics II	4 hours	
CS 1013 Visual BASIC (or other approved computer course)	3 hours	FOURTH SEMESTER	15 TOTAL HOURS	
ORIENTATION COURSES		POLI 1113 American Government	3 hours	
ORNT 1101 Freshman Orientation	1 hour	ENGR 2113 Statics (OR)		
GENERAL EDUCATION ELECTIVE COURSES	4 hours	MATH 2613 Differential Equations	3 hours	
(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 course in Language Arts, Natural Science, Foreign Languages, Fine Arts, Humanities, Mathematics, Behavioral, or Social Sciences.)		Humanities Elective	3 hours	
PROGRAM REQUIREMENT COURSES	18 TOTAL HOURS	Humanities Elective	3 hours	
**MATH 2145 Calculus I	5 hours	CS 1013 Visual BASIC	3 hours	
**MATH 2155 Calculus II	5 hours	Suggested NOC courses for specific engineering disciplines:		
**PHYS 2014 Engineering Physics I	4 hours	ALL DISCIPLINES:		
**PHYS 2114 Engineering Physics II	4 hours	BIOL 1114 General Biology	4 hours	
RECOMMENDED PROGRAM ELECTIVE COURSES	6 TOTAL HOURS	PHIL 2223 Business Ethics	3 hours	
**ENGR 2113 Statics	3 hours	ENGR 2123 Dynamics		
**ENGR 2443 Thermodynamics	3 hours	BIOSYSTEMS AGRICULTURAL:		
**MATH 2613 Differential Equations	3 hours	BISI 2124 Microbiology	4 hours	
TOTAL CREDIT HOURS	61	BISI 1414 General Biology	4 hours	
		METEOROLOGY DISCIPLINE		
		SPCH 1713 Intro to Oral Communications (OR) JOUR 1113 Writing for Mass Media (OR) ENGL 1223 Technical Writing	3 hours	
		ESCI 1214 Earth Science (OR)		
		BISI 1314 General Botany (OR)		
		BISI 1414 General Zoology	4 hours	
		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 an 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.		

*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 & 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.