Mathematics and Physical Science - Pre-Engineering Option
Associate in Science Degree
Division of Engineering, Physical Science & PTEC

NOC Northern Oklahoma College — 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
English Composition Courses				
	ENGL	1113	English Composition I	3 hours
	ENGL	1213	English Composition II	3 hours
History & Government Courses				
	HIST	1483	American History to 1877	3 hours
or	HIST	1493	American History Since 1877	
	POLI	1113	American Government	3 hours
Humanities Courses				
	Electives			6 hours
One 3 hour course to be chosen from those listed with the International Dimension and 3 hours of humanities electives.				
Mathematics Courses				
	MATH	1513	Algebra for STEM	3 hours
Science Courses				
*	CHEM	1515	Chemistry for Engineers	5 hours
	PHYS	2014	Engineering Physics I	4 hours
Computer Science Courses				
	CMSC	1013	Visual Basics	3 hours
or	CMSC	2203	Python	
or	CMSC	2303	Java	
	CMSC	2313	C++	
Orientation Course				
	ORNT	1101	Freshman Orientation	1 hour
General Education Elective Course				3 hours
Select courses from: Language Arts, Natural Sciences, Foreign Languages, Fine Arts, Humanities, Mathematics, Behavioral or Social Sciences				

Program Requirement Courses				19 hours
	MATH	1613	Plane Trigonometry	3 hours
**	MATH	2144	Calculus I	4 hours
**	MATH	2154	Calculus II	4 hours
**	MATH	2164	Calculus III	4 hours
**	PHYS	2114	Engineering Physics II	4 hours

Recommended Program Elective Courses				4 hours
(Combine with Gen Ed. Hours to choose 7 hours)				
	ENGL	1223	Technical Writing	3 hours
	ENGR	1111	Intro to Engineering	1 hour
**	ENGR	2113	Statics	3 hours
**	ENGR	2123	Dynamics	3 hours
**	ENGR	2443	Thermodynamics	3 hours
**	MATH	2163	Differential Equations	3 hours
	BIOL	1114	General Biology	4 hours
	PHIL	2223	Business Ethics	3 hours

* CHEM 1315 and CHEM 1414 can be substituted for CHEM 1515.

Tonkawa -CHEM 1515 offered Fall only

Enid - CHEM 1515 offered Spring only

**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 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 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.

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

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.