

Engineering Science (grid only)

Course Sequence:

Semester 1

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
ENGR 102 - Engineering Design and Laboratory I	MATH 162	4 credits	
MATH 171 - Calculus I	MATH 162 or higher with a grade of "C" or better, or placement in MATH 171 or higher	4 credits	Quantitative Reasoning
CHEM 121 - College Chemistry I	CHEM 110 with a grade of "C" or better and FNMT 118 or higher	4 credits	Scientific Reasoning
ENGL 101 - English Composition I		3 credits	Writing, Research & Info Lit. 1
CIS 103 - Computer Applications & Concepts		3 credits	Technological Competency

Semester 2

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
ENGR 202 - Engineering Design and Laboratory II	ENGR 102	4 credits	
PHYS 140 - Mechanics, Heat and Sound	MATH 171	5 credits	
MATH 172 - Calculus II	MATH 171 or higher with a grade of "C" or better, or placement in MATH 172 or higher	4 credits	
MATH 270 - Linear Algebra	MATH 171 with a grade of "C" or better and MATH 172 with a grade of "C" or better. (MATH 172 may be taken concurrently.)	4 credits	

Summer I

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
ENGL 102 - The Research Paper	ENGL 101 with a grade of "C" or better	3 credits	Writing, Research & Info Lit. 2
ENGL 115: Public Speaking or ENGL 116: Interpersonal Communication or ENGL 117: Group and Team Communication or ENGL 118: Intercultural Communication	ENGL 101 , which may be taken concurrently	3 credits	Oral Communication/ Creative Expression
CHEM 122 - College Chemistry II	CHEM 121 with grade of "C" or better	4 credits	

Semester 3

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
MATH 271 - Calculus III	MATH 172 , MATH 270 both with a grade "C" or better	4 credits	
ENGR 221 - Vector Mechanics I (Statics) or CHEM 221 - Organic Chemistry I1	For ENGR 221: PHYS 140 and MATH 172 , both with a grade of "C" or better For CHEM 221: CHEM 122 with a grade of "C" or better	3 or 5 credits	
PHYS 241 - Electricity, Magnetism and Light	PHYS 140 and MATH 172	5 credits	

Semester 4

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
SOC 101 - Introduction to Sociology		3 credits	Cultural Analysis & Interpretation
MATH 272 - Differential Equations	MATH 172 and MATH 270 , both with a grade of "C" or better	4 credits	
ENGR 222 - Dynamics* or CHEM 222 - Organic Chemistry II*	For ENGR 222: ENGR 221 and MATH 271 , both with a grade of "C" or better For CHEM 222: CHEM 221 with grade of "C" or better	3 or 5 credits	
CSCI 111 - Computer Science I or ENGR 205 - Materials Engineering	For CSCI 111: FNMT 118 prerequisite or placement in MATH 161 or higher For ENGR 205: PHYS 241 , MATH 172	4 credits	

Minimum Credits Needed to Graduate: 71

Courses and Completion Sequence

The following courses and sequence of courses is designed for the optimal success and completion of the [Engineering Science](#) degree/certificate. Any alterations should be discussed with your academic advisor.

Semester 1

Course Number and Name	Credits	Advisory Notes	Course Type
ENGR 102 - Engineering Design and Laboratory I (Fall only)	4 credits	Prerequisites: MATH 162	Major Course
MATH 171 - Calculus I	4 credits		Quantitative Reasoning
ENGL 101 - English Composition	3 credits	Prerequisite for ENGL 102.	Writing/Research/Info Lit 1
CHEM 121 - College Chemistry I	4 credits	CHEM 110 with a grade of "C" or better or department head approval, and FNMT 118 or higher	Scientific Reasoning
CIS 103 - Computer Applications & Concepts	3 credits		Technological Competency

This is a select program. All students must complete CHEM 110 and MATH 162* (Precalculus II) with a grade of "C" or better or be MATH 171 (Calculus I) ready.

Semester 2

Course Number and Name	Credits	Advisory Notes	Course Type
ENGR 202 - Engineering Design and Laboratory II	4 credits	Offered in the Spring Semester only	Major Course
MATH 172 - Calculus II	4 credits	Prerequisite for MATH 272	Major Course

Course Number and Name	Credits	Advisory Notes	Course Type
MATH 270 - Linear Algebra	4 credits	Prerequisite for MATH 272	Major Course
PHYS 140 - Mechanics, Heat and Sound	5 credits	Prerequisite for Physics 241 and ENGR 221. It is recommended that you have taken high school physics or Physics 111 prior to taking this class.	Major Course

Summer 1

Course Number and Name	Credits	Advisory Notes	Course Type
ENGL 102 - The Research Paper	3 credits		Writing/Research/Info Lit 2
ENGL 115 - Public Speaking or ENGL 116 - Interpersonal Communication or ENGL 117 - Group and Team Communication or ENGL 118 - Intercultural Communication	3 credits		Oral Communication/ Creative Expression
CHEM 122 - College Chemistry II	4 credits	Prerequisite for CHEM 221, Organic Chemistry, to be taken in Fall. Chemical Engineering majors should take this course prior to the Fall semester.	Major Course

Semester 3

Course Number and Name	Credits	Advisory Notes	Course Type
MATH 271 - Calculus III	4 credits	Prerequisite for ENGR 222	Major Course
CHEM 122 - College Chemistry II (if not taken prior to this semester)	4 credits	Students majoring in Chemical Engineering need to take CHEM 122 prior to this semester.	Major Course
ENGR 221 - Vector Mechanics I (Statics) (Fall only) or CHEM 221 - Organic Chemistry I	3 or 5 credits	Prerequisite for ENGR 222. Course only runs in the Fall semester. Prerequisites for ENGR 221: PHYS 140 and MATH 172, both with a grade of "C" or better CHEM 221 is a prerequisite for CHEM 222. Chemical Engineering majors must take CHEM 221 and CHEM 222. Prerequisite for CHEM 221: CHEM 122.	Major Course
PHYS 241 - Electricity, Magnetism and Light	5 credits	Prerequisite for ENGR 205 Prerequisites: PHYS 140 and MATH 172	Major Course

Semester 4

Course Number and Name	Credits	Advisory Notes	Course Type
SOC 101 - Introduction to Sociology	3 credits		Cultural Analysis & Interpretation
MATH 272 - Differential Equations	4 credits		Major Course
ENGR 222 - Vector Mechanics II (Dynamics) or CHEM 222 - Organic Chemistry II	3 or 5 credits	ENGR 222 only offered in spring semester. Prerequisites for ENGR 222: ENGR 221 and MATH 271, both with a	Directed Elective

Course Number and Name	Credits	Advisory Notes	Course Type
		grade of "C" or better. Chemical Engineering students must take CHEM 222.	
CSCI 111 - Computer Science I or ENGR 205 - Materials Engineering	4 credits	FNMT 118 prerequisite or placement in MATH 161 or higher is required for CSCI 111. PHYS 241 and MATH 172 are prerequisites for ENGR 205. Directed elective depends on Engineering specialization and transfer institution. Please consult with your academic advisor.	Directed Elective