Degree Map

A.S. in Engineering Science – Catalog Year 2025-26

The number of credits you take each year will determine when you graduate. To graduate on time, you are strongly encouraged to enroll in at least 30 credits toward your degree during the calendar year, including fall and spring semesters and winter and summer sessions. This degree map is designed for students who place into **MA-441.** Additional degree maps are available for students who place into other levels of mathematics. Please see the degree website or your advisor for more information.

Courses in **Bold Text** are prerequisites for later courses or only offered in the Fall or Spring semester and should be taken where indicated in the sequence.

Fall Semester #1

Courses	Credits	Prerequisites and Corequisites[1]
ENGL-101 English Composition I (Required Core 1A - English Composition)	3	Prerequisite: Complete developmental requirements in English
MA-441 Analytic Geometry and Calculus I[2] (Required Core 1B - Mathematical & Quantitative Reasoning)	4	Prerequisite: MA-440 (C or better) or placement
PH-421 General Calculus Physics A[2,3] (Flexible Core 2E – Scientific World)	5	Prerequisite: MA-440 Corequisite: MA-441
EE-101 Engineering Design I	1	Prerequisite: MA-128 or MA-440
One course from Flexible Core 2A, 2B, 2C, or 2D[3]	3	Check individual courses for prerequisites and corequisites
Total credits for the term	**16**	

Spring Semester #1

Courses	Credits	Prerequisites and Corequisites[1]
ENGL-102 English Composition II (Required Core 1A - English Composition)	3	Prerequisite: ENGL-101 or placement
MA-442 Analytic Geometry and Calculus II	4	Prerequisite: MA-441 (C or better)
Computer Programming Option - Select from: CS-101 Algorithmic Problem Solving I OR ET-505 Introduction to C++ Object Oriented Programming OR ET-575 Introduction to C++ Programming Design and Implementation OR PH-240 Computerized Physical Measurement Using Graphical Programming	3-4	CS-101: MA-441 corequisite ET-505: none ET-575: MA-321 prerequisite OR MA-114, MA-119, or MA-440 corequisite PH-240: prerequisites of permission of the department based on one laboratory course in science or technology; MA-114, MA-119 and MA-121, or the equivalent; and ET-501, PH-303, CIS-101, or the equivalent
PH-422 General Calculus Physics B[2,3] (Additional Flexible Core Course)	5	Prerequisite: PH-421 (C or better) Corequisite: MA-442
Total credits for the term	**15-16**	

Fall Semester #2

Courses	Credits	Prerequisites and Corequisites[1]
MA-443 Analytic Geometry and Calculus III	4	Prerequisite: MA-442 (C or better)
CH-151 General Chemistry I[2] (Required Core 1C – Life & Physical Sciences)	4.5	Prerequisite: MA-119 and MA-121 or placement
EE-103 Computer Aided Analysis for Electrical Engineers	2	Corequisite: MA-441
EE-204 Electric Circuits	3	Prerequisite: MA-441
One course from Flexible Core 2A, 2B, 2C, or 2D[3]	3	Check individual courses for prerequisites and corequisites
Total credits for the term	**16.5**	

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Spring Semester #2

Courses	Credits	Prerequisites and Corequisites[1]
MA-451 Differential Equations	4	Prerequisite: MA-443 (C or better)
Engineering Advised Electives (see below)	6.5-7.5	Check individual courses for prerequisites and corequisites
One course from Flexible Core 2A, 2B, 2C, or 2D[3]	3	Check individual courses for prerequisites and corequisites
One course from Flexible Core 2A, 2B, 2C, or 2D[3]	3	Check individual courses for prerequisites and corequisites
Total credits for the term	**16.5-17.5**	
Total credits required for the A.S. degree	**65**	

Notes:

1. Prerequisites for a course must be passed before taking the course. Corequisites must be passed before taking the course or taken in the same term as the course.
2. Students are required to take specific courses in some areas of the Common Core that fulfill both general education and major requirements. If students do not take the required courses in the Common Core, they will have to take additional credits to complete their degree requirements. Students who need to take pre-requisite courses for MA-441 will need to take additional credits to complete this degree.
3. Students must complete one course from each of the Flexible Core categories (2A, 2B, 2C, 2D, and 2E) and one additional course from any one of the categories. The course from Flexible Core 2E is required to be PH-421 and the additional flexible core course is required to be PH-422.

All students must complete two (2) WI designated classes to fulfill degree requirements.

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Engineering Advised Electives

Students are advised to choose electives from the list below based on their intended engineering major after transfer.

Courses	Credits	Prerequisites and Corequisites[1]
Chemical Engineering		
CH-152 General Chemistry II	4.5	Prerequisite: CH-151
CH-251 Organic Chemistry I	5	Corequisite: CH-152 or permission of the department
CH-252 Organic Chemistry II	5	Prerequisite: CH-251
Civil Engineering		
PH-416 Thermodynamics	4	Prerequisite: PH-421 and MA-443
MT-345 Strength of Materials	3	Prerequisite: MT-341
MA-461 Linear Algebra	4	Prerequisite: MA-442 (C or better)
Electrical Engineering		
PH-416 Thermodynamics	4	Prerequisite: PH-421 and MA-443
CH-152 General Chemistry II	4.5	Prerequisite: CH-151
ET-540 Digital Computer Theory I	4	None
Mechanical Engineering		
MT-293 Parametric Computer-Aided Design Drafting	3	Prerequisite: MT-111
PH-416 Thermodynamics	4	Prerequisite: PH-421 and MA-443
PH-440 Modern Physics and Quantum Mechanics for Engineers	4	Prerequisite: PH-422; Corequisite: MA-443
MA-461 Linear Algebra	4	Prerequisite: MA-442 (C or better)
CH-152 General Chemistry II	4.5	Prerequisite: CH-151