

# Associate in Science

2017-2018 Catalog

## Concentration in Pre-Engineering

Award Granted Upon Completion: Associate in Science

Credits/Contacts Required: 63/67

Major code: 02/225

CIP Code: 240101

### Description

The Pre-Engineering Degree is designed for students who wish to transfer to a four-year college or university to obtain a degree in engineering. In addition to preparation for transfer, this program provides students with a strong general education background. By satisfying the program requirements listed below, a student also satisfies the Michigan Transfer Agreement requirements listed in the catalog. ☉

#### General Education Requirements – Min 33 credits

		<u>Cr</u>
ENGL-101	Rhetoric & Composition	3
XXXX-xxx	Communication Elective *	3
	ENGL-102 or 145; COMM-103, 104, or 120	
MATH-141	Analytical Geometry & Calc I	5
CHEM-110	General Chemistry I ** -OR-	5
CHEM-108	Technical Chemistry **	
PHYS-205	Engineering Physics I	5
XXXX-xxx	Social & Behavioral Science Electives ***	6
XXXX-xxx	Humanities Electives ***	6

☉ This degree requires fulfillment of the Michigan Transfer Agreement General Education requirements. All courses used to fulfill the MTA must have a grade of "C" or higher.

#### Requirements – Min 30 credits

		<u>Cr</u>
MATH-142	Analytical Geometry & Calculus II	5
MATH-243	Analytical Geometry & Calculus III	5
MATH-244	Differential Equations	3
MATH-250	Linear Algebra	3
PHYS-206	Engineering Physics II @ -OR-	5
CHEM-112	General Chemistry II @	
XXXX-xxx	Natural Science Elective #	3-5
XXXX-xxx	Computer Science -OR-	
	Engineering Course ##	3-4
XXXX-xxx	Approved Electives ###	3-4

#### Suggested Sequences Per Semester

		<u>Cr / Ct</u>
<b>First Semester</b>		
CHEM-110	General Chemistry ** -OR-	5/7
CHEM-108	Technical Chemistry I **	
ENGL-101	Rhetoric & Composition	3/3
MATH-141	Analytical Geometry & Calculus I	5/5
XXXX-xxx	Computer Science -OR-	
	Engineering Course ##	3-4/3-4
		<b>16-17/18-19</b>
<b>Second Semester</b>		
CHEM-112	General Chemistry II @ -OR-	3-5/3-7
XXXX-xxx	Approved Elective ###	
MATH-142	Analytical Geometry & Calculus II	5/5
PHYS-205	Engineering Physics I	5/6
XXXX-xxx	Communication Elective *	3/3
		<b>16-18/17-21</b>
<b>Third Semester</b>		
MATH-243	Analytical Geometry & Calculus III	5/5
PHYS-206	Engineering Physics II @ -OR-	
XXXX-xxx	Natural Science Elective #	3-5/3-6
XXXX-xxx	Social/Behavioral Science***	3/3
XXXX-xxx	Humanities ***	3/3
		<b>14-16/14-17</b>
<b>Fourth Semester</b>		
MATH-244	Differential Equations	3/3
MATH-250	Linear Algebra	3/3
XXXX-xxx	Social/Behavioral Science ***	3/3
XXXX-xxx	Humanities ***	3/3
XXXX-xxx	Natural Science Elective # -OR-	3-5/3-6
	Approved Elective ###	
		<b>15-17/15-18</b>

\* Students should contact their transfer institution for specific requirements. ENGL-145 is generally recommended.

\*\* Students should contact their transfer institution to determine which chemistry course is required for their engineering degree.

\*\*\* Students must choose courses in Social & Behavioral Sciences and in Humanities from two different subject areas to meet MTA. See advisor for details.

# Choose one natural science from BIOL-110, 112, 213, 214, 255, 256; CHEM-112, 201, 202; PHYS-206, 260, or 261.

## Select a computer science or engineering course from the following: CSCI-121, CSCI-122, CADD-115, CADD-120, or CADD-235.

### Students should contact their transfer institution to determine an appropriate approved elective for their degree.

@ Students should contact their transfer institution to determine if PHYS-206 or CHEM-112 is required for their engineering degree. Some engineering degrees will require both PHYS-206 and CHEM-112.