Pre-Engineering, AS

Award Granted: Associate in Science
Credits/Contacts Required: **63/67**

Major code: 02/225
CIP Code: 140102

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. ✪

Transfer Areas of Interest Include (but are not limited to):

- Chemical Engineering
- Electrical Engineering
- Mechanical Engineering
- Paper Science Engineering

General Education Requirements (Min 33 Credits)

- ENGL 101 - Rhetoric & Composition **Credits: 3**
- XXXX xxx - Communications Elective (ENGL 102 or ENGL 145; COMM 103, COMM 104, or COMM 120) **Credits: 3**
- MATH 141 - Analytical Geometry & Calculus I **Credits: 5**
- CHEM 110 - General Chemistry I **Credits: 5** * **OR** CHEM 108 - Technical Chemistry **Credits: 5** *
- PHYS 205 - Engineering Physics I **Credits: 5**
- XXXX xxx - Social & Behavioral Science Electives **Credits: 6** **
- XXXX xxx - Humanities Electives **Credits: 6** **

Program Requirements (Min 30 Credits)

- MATH 142 - Analytical Geometry & Calculus II **Credits: 5**
- MATH 243 - Analytical Geometry & Calculus III **Credits: 5**
- MATH 244 - Differential Equations **Credits: 3**
- MATH 250 - Introduction to Linear Algebra **Credits: 3**
- PHYS 206 - Engineering Physics II **Credits: 5@ OR**
- CHEM 112 - General Chemistry II **Credits: 5** @
- XXXX xxx - Natural Science Elective **Credits: 3-5**#
- XXXX xxx - Approved Electives **Credits: 6-8** ##

Suggested Sequences Per Semester

First Semester

- CHEM 110 - General Chemistry I **Credits: 5 * OR** CHEM 108 - Technical Chemistry **Credits: 5 ***
- ENGL 101 - Rhetoric & Composition **Credits: 3**
- MATH 141 - Analytical Geometry & Calculus I **Credits: 5**
- XXXX xxx – Approved Elective **Credits: 3-5 ##**

First Semester Total - Credits: 16-18 | Contacts: 18-19

Second Semester

- CHEM 112 - General Chemistry II **Credits: 5** @ **OR** XXXX xxx - Approved Elective **Credits: 3-5** ##
- MATH 142 - Analytical Geometry & Calculus II **Credits: 5**
- PHYS 205 - Engineering Physics I **Credits: 5**
- XXXX xxx - Communications Elective **Credits: 3**

Second Semester Total - Credits: 16-18 | Contacts: 17-21

Third Semester

- MATH 243 - Analytical Geometry & Calculus III **Credit(s): 5**
- PHYS 206 - Engineering Physics II **Credit(s): 5@ OR** XXXX xxx - Natural Science Elective **Credit(s): 3-5**[#]
- XXXX xxx - Social & Behavioral Science Elective **Credit(s): 3** **
- XXXX xxx - Humanities Elective **Credit(s): 3** **

Third Semester Total - Credits: 14-16 | Contacts: 16-18

Fourth Semester

- MATH 244 - Differential Equations **Credit(s): 3**
- MATH 250 - Introduction to Linear Algebra **Credit(s): 3**
- XXXX xxx - Social & Behavioral Science Elective **Credit(s): 3** **
- XXXX xxx - Humanities Elective **Credit(s): 3** **
- XXXX xxx - Natural Science Elective **Credit(s): 3-5**[#] **OR** Approved Elective **Credit(s): 3-4** [##]

Fourth Semester Total - Credits: 15-17 | Contacts: 15-19

NOTES:

✪ 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.

[*] 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 Humanities, each from two different subject areas to meet MTA. See advisor for details.

[#] Choose one natural science from BIOL 110, BIOL 112, BIOL 213, BIOL 214, BIOL 255, BIOL 256; CHEM 112, CHEM 201, CHEM 202; PHYS 206, PHYS 260, PHYS 261, or PHYS 262.

[##] Students should contact their transfer institution to determine appropriate approved electives 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.