B.S. in Chemical Engineering

2015-2016 Academic Year

Four-year Academic Plan for students starting in Calculus

Michigan Technological University
Department of Chemical Engineering

This suggested schedule includes a second semester of organic chemistry. Two semesters of organic chemistry are recommended to all chemical engineering students and is especially encouraged to those planning to minor *Polymer Science and Engineering*, *Bioprocess Engineering*, or *Mineral Processing*.

Freshman Year

Fall Semester

Course	Title	Cr
CH 1150	University Chemistry I	3
CH 1151	University Chemistry Lab I	1
CH 1153	University Chemistry Rec I	1
CM 1000	Introduction to Chemical Engg	1
ENG 1101	Engg Analysis and Prob Solv	3
MA 1160	Calculus with Technology I	4
PH 1100	Physics by Inquiry I	1
UN 1015	Compositions	3
	Co-Curricular (1 cr)* **Total**	**18**

Spring Semester

Course	Title	Cr
CH 1160	University Chemistry II	3
CH 1161	University Chemistry Lab II	1
ENG 1102	Engg Modeling and Design	3
MA 2160	Calculus with Technology II	4
PH 2100	University Physics I	3
UN 1025	Global Issues**	3
	Co-Curricular (1 cr)* **Total**	**18**

Sophomore Year

Fall Semester

Course	Title	Cr
CH 2410	Organic Chemistry I	3
CH 2411	Organic Chemistry Lab I	1
CM 2110	Fundamentals of ChE I	3
MA 3160	Multivariable Calc with Techn	4
PH 1200	Physics by Inquiry II	1
	Critical & Creat Think Course*	3
	Co-Curricular (1 cr)* **Total**	**16**

Spring Semester

Course	Title	Cr
CH 2420	Organic Chemistry II*	3
CM 2120	Fundamentals of ChE II	3
MA 2321	Elementary Linear Algebra	2
MA 3521	Elem Differential Equations	2
PH 2200	University Physics II	3
	Social Resp & Eth Reas Course*	3
	Total	**16**

Junior Year

Fall Semester

Course	Title	Cr
CH 3510	Physical Chemistry I	3
CH 3511	Physical Chemistry Lab I	2
CM 3110	Transport/Unit Operations I	3
CM 3215	Transport Laboratory	2
CM 3410	Tech Comm for ChE	3
	HASS Course*	3
	Total	**16**

Spring Semester

Course	Title	Cr
CM 3120	Transport/Unit Operations II	3
CM 3230	Thermodynamics for ChE	4
CM 3310	Process Control	3
CM 3510	Chemical Reaction Engg	3
	HASS Course*	3
	Total	**16**

Senior Year

Fall Semester

Course	Title	Cr
CM 4110	Unit Operations Lab	3
CM 4310	Chemical Process Safety/Env	3
CM 4855	ChE Proc Analysis & Design I	3
	Technical Elective*	3
	Technical Elective*	3
	HASS Course* (3000+ lev)	3
	Total	**18**

Spring Semester

Course	Title	Cr
CM 4120	Chemical Plant Operations Lab	3
CM 4860	ChE Proc Analysis & Design II	2
CM 4861	ChE Design Laboratory II	1
	Core Engineering Elective*	4
	HASS Course* (3000+ lev)	3
	Free Elective*	3
	Total	**16**

* See back for description. *Updated 4/17/2015*

** A 3000-level or higher modern language course may be used in place of UN 1025 Global Issues.

This is not an official list of degree requirements. Adjustments may be required due to curriculum changes.

Elective Worksheet - 4 year plan

Major Requirements - Technical Electives (13 credits total)

3-4 credits of Organic Chemistry II or sub

_____

4-6 credits of Core Engineering Elective

_____

_____

3-6 credits of additional Technical Electives

_____

_____

_____

Elective courses must total to at least 13 credits. Credits above 13 may be used towards free electives.

The list of approved elective courses is available on the department's advising webpage: www.mtu.edu/chemical/undergraduate/advising

General Education Requirements (24 credits total)

Core Courses (12 credits)

Compositions

UN 1015_____3 cr

Global Issues

UN 1025 or 3000+ level language_____3 cr

Critical and Creative Thinking List

_____3 cr

Social Resp. & Ethical Reasoning List

_____3 cr

Recommended HASS course: EC 3400 Economic Decision Analysis, taken prior or during fall senior year classes. This course is on the Social and Behavioral Science List and is an upper-division course.

HASS Courses (12 credits)

Communication/Composition List

_____3 cr

Humanities/Fine Arts List

_____3 cr

Social and Behavioral Science List

_____3 cr

Any List above or HASS Restricted List

_____3 cr

Upper Division Check:
At least 6 credits of HASS must be at the upper division 3000-4000 level. UN 1025 (or 3000+ level language course) and UN 1015 are prerequisites for all upper division HASS courses.

_____3 cr

_____3 cr

Co-Curricular Activities (3 credits total)

_____

_____

_____

_____

_____

_____

Co-curricular courses count for financial aid and full-time student status; however they are not included in GPA calculations or in the 131 credits total required for graduation.

Co-curricular courses can only be used once for this requirement, except PE 0210 Special Topics and PE 0425 Intramurals, which may be used twice.

Free Elective Requirement (3 credits total)

_____

_____

Free electives are any class, 1000-level or higher that are not co-curricular courses. They may be taken pass/fail, unless the course is being used for a minor.

OPTIONAL - Minor (6 credits not double counting)

(3000+ lev)_____

(3000+ lev)_____

Each minor must include at least 6 credits of 3000-level or higher courses that are <u>not counting elsewhere for your degree</u> (required courses, technical electives, HASS courses, etc.), EXCEPT these credits <u>can</u> count toward your free elective requirement.