University of Connecticut
School of Engineering

Chemical Engineering Program Roadmaps

Undergraduate Curriculum Options

For Class of 2017 and Beyond

Dear Chemical Engineering Student:

This document contains our Chemical Engineering curriculum Road Maps, showing you how to fulfill our curriculum of study while guiding you through a choice of minors.

Please note that there are no restrictions on the number of minors you may receive. Set your sights high and work with your advisor to meet your goals!

The Chemical Engineering Program Education Objectives are that our alumni:

- Prepare our graduates for professional careers through rigorous training in the fundamentals of chemical engineering.
- Prepare our graduates to contribute to the evolving and expanding field of chemical engineering by providing a foundation for post-graduate education and life-long professional development.

General CHEG Curriculum

FRESHMAN YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEM 1127Q General Chemistry	4	CHEM 1128Q General Chemistry	4
MATH 1131Q Calculus I	4	MATH 1132Q Calculus II	4
ENGR 1000 Orientation to Engineering	1	ENGR 1166 Foundations of Engineering	3
CSE 1010C Intro to Computing	3	Arts & Humanities (Content Area 1) [1]	3
ENGL 1010 or 1011 Academic Writing	4	Social Sciences (Content Area 2) [1]	3
	16		**17**

SOPHOMORE YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
PHYS 1501Q Eng Physics I	4	PHYS 1502Q Eng Physics II	4
CHEM 2443 Organic Chemistry	3	CHEM 2446 Organic Chemistry Lab	1
MATH 2110Q Multivariable Calculus	4	CHEM 2444 Organic Chemistry	3
CHEG 2103 Intro to Chem Engineering	3	MATH 2410Q Diff Equations	3
PHIL 1104 Ethics (Content Area 1) [1]	3	CHEG 2111 Thermodynamics I	3
		Diversity and Multiculture (Content Area 4) [1]	3
	17		**17**

JUNIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 3112 Thermodynamics II	3	CHEG 3124 Heat & Mass Transfer	3
CHEG 3123 Fluid Mechanics	3	CHEG 3128 Junior Chem Engineering Lab	2
CHEG 3145 Chemical Engineering Analysis	3	CHEG 3151 Process Kinetics	3
Social Science (Content Area 2) [1]	3	Engineering Requirement [3]	3
MCB/Biology/CHEM Requirement [4]	4	Diversity and Multiculture (Content Area 4) [1]	3
		Free Elective	3
	16		**17**

SENIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3	CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3
CHEG 4140 Capstone Design 1	3	CHEG 4143W Capstone Design 2	3
CHEG 4142 Unit Ops & Process Simulation Lab	3	CHEG 4147 Process Dynamics & Control	3
Engineering Requirement [3]	3	CHEG Requirement [3]	3
Free Elective	3	Professional Requirement [3]	3
14 (with lab) or 15 (with elective)		**14 (with lab) or 15 (with elective)**	

Total 129 credits

[1] University General Education Requirements: Courses selected for Content Areas 1 & 2 must be in four different departments. One course in Content Area 4 must be an international course. One course in Content Area 4 may also satisfy a Content Area 1 or 2 requirement: in this case one Content Area course can be substituted with a Free Elective. Students are encouraged to select their Content Area courses carefully to take advantage of "double-dipping" and also satisfy their second W requirement.

[2] MCB/Biology/CHEM requirement may be satisfied by the following courses: Principles of Biology (BIOL 1107/1108 – 4 credits), Introduction to Biochemistry (MCB 2000 – 4 credits), Biochemistry (MCB 3010 – 5 credits) or Fundamentals of Microbiology (MCB 2610 – 4 credits), Analytical Chemistry (CHEM 3332 - 4 credits), Physical Chemistry 2 (CHEM 3564 - 4 credits) or others by petition.

[3] CHEG Requirements are satisfied by any 2000 level chemical engineering course; Engineering Requirements are satisfied by any 2000 level engineering course; Professional Requirements are satisfied by any 2000 level engineering, science or math courses.

[4] MCB/Biology/CHEM requirement may be satisfied by the following courses: Principles of Biology (BIOL 1107/1108 – 4 credits), Introduction to Biochemistry (MCB 2000 – 4 credits), Biochemistry (MCB 3010 – 5 credits) or Fundamentals of Microbiology (MCB 2610 – 4 credits), Physical Chemistry (CHEM 3563 - 4 credits), Analytical Chemistry (CHEM 3332 - 4 credits), Physical Chemistry 2 (CHEM 3564 - 4 credits) or others by petition.

Chemical Engineering Major – Chemistry Minor Curriculum

FRESHMAN YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEM 1127Q General Chemistry	4	CHEM 1128Q General Chemistry	4
MATH 1131Q Calculus I	4	MATH 1132Q Calculus II	4
ENGR 1000 Orientation to Engineering	1	ENGR 1166 Foundations of Engineering	3
CSE 1010C Intro to Computing	3	Arts & Humanities (Content Area 1) [1]	3
ENGL 1010 or 1011 Academic Writing	4	Social Sciences (Content Area 2) [1]	3
	16		**17**

SOPHOMORE YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
PHYS 1501Q Eng Physics I	4	PHYS 1502Q Eng Physics II	4
CHEM 2443 Organic Chemistry [2]	3	CHEM 2446 Organic Chemistry Lab [2]	1
MATH 2110Q Multivariable Calculus	4	CHEM 2444 Organic Chemistry [2]	3
CHEG 2103 Intro to Chem Engineering	3	MATH 2410Q Diff Equations	3
PHIL 1104 Ethics (Content Area 1) [1]	3	CHEG 2111 Thermodynamics I	3
		Diversity and Multiculture (Content Area 4) [1]	3
	17		**17**

JUNIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 3112 Thermodynamics II	3	CHEG 3124 Heat & Mass Transfer	3
CHEG 3123 Fluid Mechanics	3	CHEG 3151 Process Kinetics	3
CHEG 3145 Chemical Engineering Analysis	3	CHEG 3128 Junior Chem Engineering Lab	2
Social Science (Content Area 2) [1]	3	Engineering Requirement [3]	3
CHEM 3332 Analytical Chemistry [2]	4	Diversity and Multiculture (Content Area 4) [1]	3
		Free Elective	2
	16		**16**

SENIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3	CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3
CHEG 4140 Capstone Design 1	3	CHEG 4143W Capstone Design 2	3
CHEG 4142 Unit Ops & Process Simulation Lab	3	CHEG 4147 Process Dynamics & Control	3
Engineering Requirement [3]	3	CHEG Requirement [3]	3
CHEM Elective[2]	4	Professional Requirement [3]	3
15 (with lab) or 16 (with elective)		**14 (with lab) or 15 (with elective)**	

Total 129 credits

[1] University General Education Requirements: Courses selected for Content Areas 1 & 2 must be in four different departments. One course in Content Area 4 must be an international course. One course in Content Area 4 may also satisfy a Content Area 1 or 2 requirement: in this case one Content Area course can be substituted with a Free Elective. Students are encouraged to select their Content Area courses carefully to take advantage of "double-dipping" and also satisfy their second W requirement.

[2]The Chemistry minor has the following required courses: Organic I/II/Lab (CHEM 2443, 2444, 2446) and Analytical Chemistry (CHEM 3332). One course must be selected from the following list: [FALL] Inorganic Chemistry (CHEM 3210), Instrumental Analysis (CHEM 3334) [SPRING] Polymeric Materials (CHEM 3661) or Advanced Organic Chemistry (CHEM 3442W). At least 15 credits total are required. To complete the minor in the fewest possible courses, studetns should request permission to take CHEM 3564 (Physical Chemistry II) in place of CHEM 3653 (Physical Chemistry I). See also http://catalog.uconn.edu/minors/chemistry/.

[3] CHEG Requirements are satisfied by any 2000 level chemical engineering course; Engineering Requirements are satisfied by any 2000 level engineering course; Professional Requirements are satisfied by any 2000 level engineering, science or math courses.

Chemical Engineering Major - Environmental Engineering Minor

FRESHMAN YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEM 1127Q General Chemistry	4	CHEM 1128Q General Chemistry	4
MATH 1131Q Calculus I	4	MATH 1132Q Calculus II	4
ENGR 1000 Orientation to Engineering	1	ENGR 1166 Foundations of Engineering	3
CSE 1010C Intro to Computing	3	Arts & Humanities (Content Area 1) [1]	3
ENGL 1010 or 1011 Academic Writing	4	Social Sciences (Content Area 2) [1]	3
	16		**17**

SOPHOMORE YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
PHYS 1501Q Eng Physics I	4	PHYS 1502Q Eng Physics II	4
CHEM 2443 Organic Chemistry	3	CHEM 2446 Organic Chemistry Lab	1
MATH 2110Q Multivariable Calculus	4	CHEM 2444 Organic Chemistry	3
CHEG 2103 Intro to Chem Engineering	3	MATH 2410Q Diff Equations	3
ENVE 2310* Fund of Environmental Engr [2]	3	CHEG 2111 Thermodynamics I	3
		Free Elective	3
	17		**17**

JUNIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 3112 Thermodynamics II	3	CHEG 3124 Heat & Mass Transfer	3
CHEG 3123 Fluid Mechanics	3	CHEG 3151 Process Kinetics	3
CHEG 3145 Chemical Engineering Analysis	3	CHEG 3128 Junior Chem Engineering Lab	2
Social Science (Content Area 2)[1]	3	ENVE 4310 Environmental Modeling[2]	3
MCB/Biology/CHEM Requirement[4]	4	ENVE 3230* Intro to Air Pollution[2 & 3]	3
		Diversity and Multiculture (Content Area 4)[1]	3
	16		**17**

SENIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3	CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3
CHEG 4140 Capstone Design 1	3	CHEG 4143W Capstone Design 2	3
CHEG 4142 Unit Ops & Process Simulation Lab	3	CHEG 4147 Process Dynamics & Control	3
CHEG Requirement [3]	3	ENVE 3220* Water Quality Engineeringr[2]	3
PHIL 1104 Ethics (Content Area 1)[1]	3	Diversity & Multi-Culture (Content Area 4)[1]	3
14 (with lab) or 15 (with elective)		**14 (with lab) or 15 (with elective)**	

Total 129 credits

[1] University General Education Requirements: Courses selected for Content Areas 1 & 2 must be in four different departments. One course in Content Area 4 must be an international course. One course in Content Area 4 may also satisfy a Content Area 1 or 2 requirement: in this case one Content Area course can be substituted with a Free Elective. Students are encouraged to select their Content Area courses carefully to take advantage of "double-dipping" and also satisfy their second W requirement.

[2]The Environmental Engineering minor requires 18 credits including ENVE 3220, 2310, 3230 and 4310 plus 6 credits from an approved list of 2000-level courses and above (which includes CHEG 3151 and 4147). Review the Environmental Engineering minor website for requirement changes and other options. You must get a minor plan of study approved in advance by the Environmental Engineering program director.
Denotes courses that **must be taken in the semester indicated due to scheduling conflicts (as of last Roadmap revision).*

[3]CHEG Requirements are satisfied by any 2000 level chemical engineering course; Engineering Requirements are satisfied by any 2000 level engineering course; Professional Requirements are satisfied by any 2000 level engineering, science or math courses.

[4] MCB/Biology/CHEM requirement may be satisfied by the following courses: Principles of Biology (BIOL 1107/1108 – 4 credits), Introduction to Biochemistry (MCB 2000 – 4 credits), Biochemistry (MCB 3010 – 5 credits) or Fundamentals of Microbiology (MCB 2610 – 4 credits), Physical Chemistry (CHEM 3563 - 4 credits), Analytical Chemistry (CHEM 3332 - 4 credits), Physical Chemistry 2 (CHEM 3564 - 4 credits) or others by petition.

Chemical Engineering Major – Materials Science Minor Curriculum

FRESHMAN YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEM 1127Q General Chemistry	4	CHEM 1128Q General Chemistry	4
MATH 1131Q Calculus I	4	MATH 1132Q Calculus II	4
ENGR 1000 Orientation to Engineering	1	ENGR 1166 Foundations of Engineering	3
CSE 1010C Intro to Computing	3	Arts & Humanities (Content Area 1) [1]	3
ENGL 1010 or 1011 Academic Writing	4	Social Sciences (Content Area 2) [1]	3
	16		**17**

SOPHOMORE YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
PHYS 1501Q Eng Physics I	4	PHYS 1502Q Eng Physics II	4
CHEM 2443 Organic Chemistry	3	CHEM 2446 Organic Chemistry Lab	1
MATH 2110Q Multivariable Calculus	4	CHEM 2444 Organic Chemistry	3
CHEG 2103 Intro to Chem Engineering	3	MATH 2410Q Diff Equations	3
MSE 2101/2001 Intro to Mat Sci & Engr [2]	3	CHEG 2111 Thermodynamics I	3
		MSE 2102/2002 Intro to Mat Sci & Engr II [2]	3
	17		**17**

JUNIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 3112 Thermodynamics II	3	CHEG 3124 Heat & Mass Transfer	3
CHEG 3123 Fluid Mechanics	3	CHEG 3128 Junior Chem Engineering Lab	2
CHEG 3145 Chemical Engineering Analysis	3	CHEG 3151 Process Kinetics	3
PHIL 1104 Ethics (Content Area 1)[1]	3	CHEG 3156 CHEG/MSE Req. (Polymers)[2,3]	3
MCB/Biology/CHEM Requirement[4]	4	Diversity and Multiculture (Content Area 4)[1]	3
		MSE Minor Requirement[2]	3
	16		**17**

SENIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3	CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3
CHEG 4140 Capstone Design 1	3	CHEG 4143W Capstone Design 2	3
CHEG 4142 Unit Ops & Process Simulation Lab	3	CHEG 4147 Process Dynamics & Control	3
MSE Minor Requirement[2]	3	Diversity and Multiculture (Content Area 4)[1]	3
Social Science (Content Area 2) [1]	3	Free Elective	3
14 (with lab) or 15 (with elective)		**14 (with lab) or 15 (with elective)**	

Total 129 credits

[1] University General Education Requirements: Courses selected for Content Areas 1 & 2 must be in four different departments. One course in Content Area 4 must be an international course. One course in Content Area 4 may also satisfy a Content Area 1 or 2 requirement: in this case one Content Area course can be substituted with a Free Elective. Students are encouraged to select their Content Area courses carefully to take advantage of "double-dipping" and also satisfy their second W requirement.

[2] The Materials Science Minor requires 15 credits including MSE 2101, 2102 plus 9 credit selected from MSE 3000-level or 4000-level courses (BME 3700 and CHEG 3156 qualifies as MSE 3000-level courses). You should review the Materials Science minor website for other options and details. You must get a minor plan of study two semesters before graduation and have an approved plan of study one semester before graduation form the Materials Science Program Director.

[3] CHEG Requirements are satisfied by any 2000 level chemical engineering course.

[4] MCB /Biology/CHEM requirement may be satisfied by the following courses: Principles of Biology (BIOL 1107/1108 – 4 credits), Introduction to Biochemistry (MCB 2000 – 4 credits), Biochemistry (MCB 3010 – 5 credits) or Fundamentals of Microbiology (MCB 2610 – 4 credits), Analytical Chemistry (CHEM 3332 – 4 credits), Physical Chemistry 2 (CHEM 3564 – 4 credits) or others by petition.

Chemical Engineering Major – Materials Science Minor Curriculum with Biomaterials Option

FRESHMAN YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEM 1127Q General Chemistry	4	CHEM 1128Q General Chemistry	4
MATH 1131Q Calculus I	4	MATH 1132Q Calculus II	4
ENGR 1000 Orientation to Engineering	1	ENGR 1166 Foundations of Engineering	3
CSE 1010C Intro to Computing	3	Arts & Humanities (Content Area 1) [1]	3
ENGL 1010 or 1011 Academic Writing	4	Social Sciences (Content Area 2) [1]	3
	16		**17**

SOPHOMORE YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
PHYS 1501Q Eng Physics I	4	PHYS 1502Q Eng Physics II	4
CHEM 2443 Organic Chemistry	3	CHEM 2446 Organic Chemistry Lab	1
MATH 2110Q Multivariable Calculus	4	CHEM 2444 Organic Chemistry	3
CHEG 2103 Intro to Chem Engineering	3	MATH 2410Q Diff Equations	3
BME 2101 Intro to Biomedical Engr [5]	3	CHEG 2111 Thermodynamics I	3
		MSE 2101 Intro to Mat Sci & Engr I [2]	3
	17		**17**

JUNIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 3112 Thermodynamics II	3	CHEG 3124 Heat & Mass Transfer	3
CHEG 3123 Fluid Mechanics	3	CHEG 3151 Process Kinetics	3
CHEG 3145 Chemical Engineering Analysis	3	CHEG 3128 Junior Chem Engineering Lab	2
MCB/Biology/CHEM Requirement [4]	4	BME/MSE 3700 Biomaterials [2]	4
MSE 2102 Intro to Mat Sci & Engr II [2]	3	Diversity and Multiculture (Content Area 4)	3
		CHEG 3156 Polymeric Materials [2,3`]	3
	16		**18**

SENIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 4139 Chem Engineering Lab		CHEG 4139 Chem Engineering Lab	
OR CHEG Requirement [3]	2 or 3	**OR** CHEG Requirement [3]	2 or 3
CHEG 4140 Capstone Design 1	3	CHEG 4143W Capstone Design 2	3
CHEG 4142 Unit Ops & Process Simulation Lab	3	CHEG 4147 Process Dynamics & Control	3
Diversity and Multiculture (Content Area 4) [1]	3	PHIL 1104 Ethics (Content Area 1) [1]	3
MSE Minor Requirement [2]	3	Social Science (Content Area 2) [1]	3
14 (with lab) or 15 (without lab)		**14 (without lab) or 15 (with lab)**	

Total 130 credits

[1] University General Education Requirements: Courses selected for Content Areas 1 & 2 must be in four different departments. One course in Content Area 4 must be an international course. One course in Content Area 4 may also satisfy a Content Area 1 or 2 requirement: in this case one Content Area course can be substituted with a 2-credit Free Elective because only 129 total credits are required. Students are encouraged to select their Content Area courses carefully to also satisfy the second W requirement.

[2] The Materials Science Minor requires 15 credits including MSE 2101 and 2102 plus 9 credits selected from MSE 3000-level or 4000-level courses (BME 3700 and CHEG 3156 qualify as MSE 3000-level courses). Review the Materials Science minor website for other options and details. You must get a minor plan of study two semesters before graduation and have an approved plan of study one semester before graduation from the Materials Science Program Director.

[3] CHEG Requirements are satisfied by any 2000 level chemical engineering course.

[4] MCB /Biology/CHEM requirement may be satisfied by the following courses: Principles of Biology (BIOL 1107/1108 – 4 credits), Introduction to Biochemistry (MCB 2000 – 4 credits), Biochemistry (MCB 3010 – 5 credits) or Fundamentals of Microbiology (MCB 2610 – 4 credits), Analytical Chemistry (CHEM 3332 – 4 credits), Physical Chemistry 2 (CHEM 3564 – 4 credits) or others by petition.

[5] BME 2101 must be taken in this semester to be able to fit BME 3700 in subsequent semesters.

Chemical Engineering Major - Math Minor Curriculum

FRESHMAN YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEM 1127Q General Chemistry	4	CHEM 1128Q General Chemistry	4
MATH 1131Q Calculus I	4	MATH 1132Q Calculus II	4
ENGR 1000 Orientation to Engineering	1	ENGR 1166 Foundations of Engineering	3
CSE 1010C Intro to Computing	3	Arts & Humanities (Content Area 1) [1]	3
ENGL 1010 or 1011 Academic Writing	4	Social Sciences (Content Area 2) [1]	3
	16		**17**

SOPHOMORE YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
PHYS 1501Q Eng Physics I	4	PHYS 1502Q Eng Physics II	4
CHEM 2443 Organic Chemistry	3	CHEM 2446 Organic Chemistry Lab	1
MATH 2110Q Multivariable Calculus [2]	4	CHEM 2444 Organic Chemistry	3
CHEG 2103 Intro to Chem Engineering	3	MATH 2410Q Diff Equations [2]	3
PHIL 1104 Ethics (Content Area 1) [1]	3	CHEG 2111 Thermodynamics I	3
		MATH 2210Q Applied Linear Algebra [2]	3
	17		**17**

JUNIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 3112 Thermodynamics II	3	CHEG 3124 Heat & Mass Transfer	3
CHEG 3123 Fluid Mechanics	3	CHEG 3151 Process Kinetics	3
CHEG 3145 Chemical Engineering Analysis	3	CHEG 3128 Junior Chem Engineering Lab	2
Social Science (Content Area 2)[1]	3	Engineering Requirement[3]	3
MCB/Biology/CHEM Requirement[4]	4	Diversity and Multiculture (Content Area 4)[1]	3
		CHEG Requirement [3]	3
	16		**17**

SENIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3	CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3
CHEG 4140 Capstone Design 1	3	CHEG 4143W Capstone Design 2	3
CHEG 4142 Unit Ops & Process Simulation Lab	3	CHEG 4147 Process Dynamics & Control	3
Engineering Requirement[3]	3	Diversity and Multiculture (Content Area 4)[1]	3
MATH Elective for Minor[2]	3	MATH Elective for Minor[2]	3
14 (with lab) or 15 (with elective)		**14 (with lab) or 15 (with elective)**	

Total 129 credits

[1] University General Education Requirements: Courses selected for Content Areas 1 & 2 must be in four different departments. One course in Content Area 4 must be an international course. One course in Content Area 4 may also satisfy a Content Area 1 or 2 requirement: in this case one Content Area course can be substituted with a Free Elective. Students are encouraged to select their Content Area courses carefully to take advantage of "double-dipping" and also satisfy their second W requirement.

[2] The Math minor requires at least 15 credits following one of three tracks: Track 1. Five courses chosen from List A. Track 2. Five courses chosen from Lists A and B with at least two courses coming from List B. Note that all the courses in List B (except for MATH 2710 or 2142) have a prerequisite of a grade of C (2.0) or better in MATH 2710 (or 2142).Track 3 and information on the List A and B courses can be found at: http://www.math.uconn.edu/degree-programs/undergraduate/mathematics-minor/

[3] CHEG Requirements are satisfied by any 2000-level and above chemical engineering course; Engineering Requirements are satisfied by any 2000-level and above engineering course; Professional Requirements are satisfied by any 2000-level and above engineering, science or math courses. A full list can be found at http://web.uconn.edu/undergradcatalog/engr.htm

[4] MCB/Biology/CHEM requirement may be satisfied by the following courses: Principles of Biology (BIOL 1107/1108 – 4 credits), Introduction to Biochemistry (MCB 2000 – 4 credits), Biochemistry (MCB 3010 – 5 credits) or Fundamentals of Microbiology (MCB 2610 – 4 credits), Analytical Chemistry (CHEM 3332 - 4 credits), Physical Chemistry 2 (CHEM 3564 - 4 credits) or others by petition.

Chemical Engineering Major – Molecular and Cell Biology Minor Curriculum

FRESHMAN YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEM 1127Q General Chemistry	4	CHEM 1128Q General Chemistry	4
MATH 1131Q Calculus I	4	MATH 1132Q Calculus II	4
ENGR 1000 Orientation to Engineering	1	ENGR 1166 Foundations of Engineering	3
CSE 1010C Intro to Computing	3	Arts & Humanities (Content Area 1)[1]	3
ENGL 1010 or 1011 Academic Writing	4	BIOL 1107 Principles of Biology[2]	4
	16		**18**

SOPHOMORE YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
PHYS 1501Q Eng Physics I	4	PHYS 1502Q Eng Physics II	4
CHEM 2443 Organic Chemistry	3	CHEM 2446 Organic Chemistry Lab	1
MATH 2110Q Multivariable Calculus	4	CHEM 2444 Organic Chemistry	3
CHEG 2103 Intro to Chem Engineering	3	MATH 2410Q Diff Equations	3
MCB 2410 Genetics[2]	3	CHEG 2111 Thermodynamics I	3
		PHIL 1104 Ethics (Content Area 1)[1]	3
	17		**17**

JUNIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 3112 Thermodynamics II	3	CHEG 3124 Heat & Mass Transfer	3
CHEG 3123 Fluid Mechanics	3	CHEG 3151 Process Kinetics	3
CHEG 3145 Chemical Engineering Analysis	3	CHEG 3128 Junior Chem Engineering Lab	2
Social Science (Content Area 2)[1]	3	CHEG Requirement[3, 4]	3
MCB 2000 Biochemistry with Lab[2]	4	MCB 2610 Microbiology with Lab[2]	4
		Diversity and Multiculture (Content Area 4)[1]	3
	16		**18**

SENIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 4139 Chem Engineering Lab	2	CHEG Requirement[3]	3
CHEG 4140 Capstone Design 1	3	CHEG 4143W Capstone Design 2	3
CHEG 4142 Unit Ops & Process Simulation Lab	3	CHEG 4147 Process Dynamics & Control	3
MCB Requirement[2]	4	Social Science (Content Area 2)[1]	3
Engineering Requirement[3]	3	Engineering Requirement[3]	3
Diversity and Multiculture (Content Area 4)[1]	3		
	18		**15**

Total 135 credits

[1] University General Education Requirements: Courses selected for Content Areas 1 & 2 must be in four different departments. One course in Content Area 4 must be an international course. One course in Content Area 4 may also satisfy a Content Area 1 or 2 requirement: in this case one Content Area course can be eliminated for a total of 132 credits required. Students are encouraged to select their Content Area courses carefully to take advantage of "double-dipping" and also satisfy the second W requirement.

[2] The MCB minor requires 15 credits of 2000 level MCB courses including MCB 2000 or 3010, 2210 or 2610 and 2410 or 2413 or 3201 or 3617, with a grade of C or better in each course. Students wishing to complete the 15 credits requirement with 4 courses are advised to take MCB 2000 and 2610 and two classes totaling 7 credits. See also the MCB minor checklist http://web.uconn.edu/mcb/undergraduate/MCBminor.pdf.

[3] CHEG Requirements are satisfied by any 2000 level chemical engineering course; Engineering Requirements are satisfied by any 2000 level engineering course; Professional Requirements are satisfied by any 2000 level engineering, science or math courses.

[4] CHEG 3173, Intro Biochemical Engineering, is strongly suggested for MCB minors.

Chemical Engineering Major – Pre-Med/Pre-Dental Curriculum

FRESHMAN YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEM 1127Q General Chemistry	4	CHEM 1128Q General Chemistry	4
MATH 1131Q Calculus I	4	MATH 1132Q Calculus II	4
ENGR 1000 Orientation to Engineering	1	ENGR 1166 Foundations of Engineering	3
CSE 1010C Intro to Computing	3	BIOL 1107 Principles of Biology I with Lab[2]	4
ENGL 1010 or 1011 Academic Writing	4	Pre-med prep English Course W[2]	3
Social Sciences (Content Area 2, *Psychology*)[1,2]	3		
	19		**18**

SOPHOMORE YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
PHYS 1501Q Eng Physics I with Lab	4	PHYS 1502Q Eng Physics II with Lab	4
CHEM 2443 Organic Chemistry	3	CHEM 2444 Organic Chemistry	3
MATH 2110Q Multivariable Calculus	4	CHEM 2446 Organic Chemistry Lab	1
CHEG 2103 Intro to Chem Engineering	3	MATH 2410Q Diff Equations	3
Pre-med prep (Genetics w/Lab, MCB 2413)[2]	4	CHEG 2111 Thermodynamics I	3
		Pre-med prep (Microbio w/Lab, MCB 2610)[2]	4
	18		**18**

JUNIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 3112 Thermodynamics II	3	CHEG 3124 Transfer Operations II	3
CHEG 3123 Fluid Mechanics	3	CHEG 3151 Process Kinetics	3
CHEG 3145 Chemical Engineering Analysis	3	CHEG 3128 Heat/Mass/Kinetics Lab	2
Pre-med prep (Biochemistry w/Lab, MCB 2000)[2]	4	CHEG Requirement[3]	3
Social Sciences (Content Area 2, *Sociology*)[1]	3	Diversity & MultiCulture (Content Area 4)[1]	3
		Pre-med prep (Statistics)	3
	16		**17**

SENIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 4139 Chem Engineering Lab	2	CHEG Requirement[3]	3
CHEG 4140 Capstone Design 1	3	CHEG 4143W Capstone Design 2	3
CHEG 4142 Unit Ops & Process Simulation Lab	3	CHEG 4147 Process Dynamics & Control	3
Engineering Requirement[3]	3	Engineering Requirement[3]	3
PHIL 1104 Ethics (Content Area 1)[1]	3	Arts & Humanities (Content Area 1)[1]	3
Diversity & MultiCulture (Content Area 4)[1]	3		
	17		**15**

Total 139 credits

[1] University General Education Requirements: Courses selected for Content Areas 1 & 2 must be in four different departments. One course in Content Area 4 must be an international course. One course in Content Area 4 may also satisfy a Content Area 1 or 2 requirement: in this case one Content Area course can be eliminated for a total of 135 credits required. Students are encouraged to select their Content Area courses carefully to take advantage of "double-dipping".

[2] The above roadmap is a suggestion. At a minimum, in addition to courses required by CHEG, medical schools require (i) two semesters of English; (ii) several upper-division biology courses where genetics, cell biology, and biochemistry are considered the "core"; (iii) social sciences. The new MCAT includes scored sections on behavioral and social sciences and data analysis, so completing courses in psychology, sociology, and statistics before taking the MCAT is considered valuable. Dental schools may require four semesters of biology. Register at http://premed.uconn.edu and meet with a *pre-med advisor* early in your program.

[3] CHEG Requirements are satisfied by any 2000 level chemical engineering course; Engineering Requirements are satisfied by any 2000 level engineering course.

Chemical Engineering Major – Engineering Management Minor

FRESHMAN YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEM 1127Q General Chemistry	4	CHEM 1128Q General Chemistry	4
MATH 1131Q Calculus I	4	MATH 1132Q Calculus II	4
ENGR 1000 Orientation to Engineering	1	ENGR 1166 Foundations of Engineering	3
CSE 1010C Intro to Computing	3	Arts & Humanities (Content Area 1) [1]	3
ENGL 1010 or 1011 Academic Writing	4	Social Sciences (Content Area 2) [1]	3
	16		**17**

SOPHOMORE YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
PHYS 1501Q Eng Physics I	4	PHYS 1502Q Eng Physics II	4
CHEM 2443 Organic Chemistry	3	CHEM 2446 Organic Chemistry Lab	1
MATH 2110Q Multivariable Calculus	4	CHEM 2444 Organic Chemistry	3
CHEG 2103 Intro to Chem Engineering	3	MATH 2410Q Diff Equations	3
MEM 2221 Principles of Engr Mgmt [2]	3	CHEG 2111 Thermodynamics I	3
		MEM 2211 Intro to Manufac. Systems [2]	3
	17		**17**

JUNIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 3112 Thermodynamics II	3	CHEG 3124 Heat & Mass Transfer	3
CHEG 3123 Fluid Mechanics	3	CHEG 3151 Process Kinetics	3
CHEG 3145 Chemical Engineering Analysis	3	CHEG 3128 Junior Chem Engineering Lab	2
MEM 3221 or another course from the list [2]	3	OPIM 3801 Principles of Proj. Mgmt. [2]	3
MCB/Biology/CHEM Requirement [4]	4	Diversity and MultiCulture (Content Area 4) [1]	3
		Social Sciences (Content Area 2) [1]	3
	16		**17**

SENIOR YEAR

First Semester	*Credits*	*Second Semester*	*Credits*
CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3	CHEG 4139 Chem Engineering Lab **OR** CHEG Requirement [3]	2 or 3
CHEG 4140 Capstone Design 1	3	CHEG 4147 Process Dynamics & Control	3
CHEG 4142 Unit Ops & Process Simulation	3	CHEG 4143W Capstone Design 2	3
OPIM 3103 or another course from the list [2]	3	CHEG Requirement [3]	3
PHIL 1104 Ethics (Content Area 1) [1]	3	Diversity and Multiculture (Content Area 4) [1]	3
14 (with lab) or 15 (with elective)		**14 (with lab) or 15 (with elective)**	

Total 129 credits

[1] University General Education Requirements: Courses selected for Content Areas 1 & 2 must be in four different departments. One course in Content Area 4 must be an international course. One course in Content Area 4 may also satisfy a Content Area 1 or 2 requirement: in this case one Content Area course can be substituted with a Free Elective. Students are encouraged to select their Content Area courses carefully to take advantage of "double-dipping" and also satisfy their second W requirement.

[2] The Engineering Management - Business minor requires the following core courses: MEM 2221 or BADM 3761, OPIM 3801, and MEM 2211 or 3221. In addition, the minor requires two additional courses from the following list: BADM 2710, 3730, 3730, 3750, 3234, and 3235; BADM 3760 or OPIM 3103; OPIM 4895; MEM 3221 (if not used to fulfill the core requirements). Please note that BADM 2710, 3730, 3730, 3750, 3234, and 3235 have course prerequisites. Also note that students may need to request the permission of the instructor for OPIM courses that are restricted to Business majors.

[3] CHEG Requirements are satisfied by any 2000 level chemical engineering course.

[4] MCB/Biology/CHEM requirement may be satisfied by the following courses: Principles of Biology (BIOL 1107/1108 – 4 credits), Introduction to Biochemistry (MCB 2000 – 4 credits), Biochemistry (MCB 3010 – 5 credits) or Fundamentals of Microbiology (MCB 2610 – 4 credits), Physical Chemistry (CHEM 3563 - 4 credits), Analytical Chemistry (CHEM 3332 - 4 credits), Physical Chemistry 2 (CHEM 3564 - 4 credits) or others by petition.