

Joint BS in Chemical Engineering/MS in Chemical Engineering

To earn a joint Bachelor of Science in Chemical Engineering/Master of Science in Chemical Engineering degree from UIC, students need to complete university, college, and department degree requirements. The Department of Chemical Engineering degree requirements are outlined below. Students should consult the *College of Engineering* section for additional degree requirements and college academic policies.

The Joint Bachelor of Science in Chemical Engineering (BSCHE) and Master of Science in Chemical Engineering (MSCHE) is designed for undergraduate students who desire to pursue graduate studies in Chemical Engineering or who wish to prepare themselves for advanced placement in the workplace. Students will earn both a BSCHE and an MSCHE degree upon completion, with 8 hours of course work shared between the two degrees.

The requirements for completion of the combined BSCHE/MSCHE degree are identical to the completion of these two separate degrees; however, there are 8 hours of shared course work used for both degrees. Completion of 122 hours at the undergraduate level; plus 8 shared hours counting toward both the BSCHE and MSCHE degrees; plus 28 hours of course work at the graduate level will result in joint BSCHE/MSCHE degrees. Students accepted into the joint degree program will be able to take a 400-level (graduate) Chemical Engineering course and a 500-level seminar course after they complete CHE 301, CHE 311, CHE 312, CHE 313, and CHE 321. These students will be eligible to enroll as graduate students to receive 4 hours for the 400-level (graduate) chemical engineering course. The 400-level CHE course will count towards the technical elective course for the bachelor's degree and as an elective course for the master's degree. The student will then select a 500-level seminar course and a 400-level course from other engineering majors chosen in consultation with their CHE advisor. The 400-level non-CHE course will count towards the elective course outside the major for the bachelor's degree (or free electives in the BS in CHE) and the elective course for the master's degree. The 500-level seminar courses will count towards the elective course for the master's degree.

Students can [apply for the joint degree](#) at any time before the end of the second week of the fall term of their senior year in the BS program. A GPA of 2.50/4.00 or higher in the prior semester is required for application to the joint BS/MS degree program. Students also need to maintain an overall GPA of 2.00 or higher in BS and an overall GPA of 3.00 or higher in the MS program. The applications will be reviewed by the Graduate Admission Committee in the Chemical Engineering department to determine whether the student will be admitted to this program. The department reserves the right to decline or accept any application. If a student is admitted to the joint program, a Change of Program form will be processed to finalize the admission.

Course	Title	Hours
First Year		
First Semester		
ENGR 100	Engineering Orientation ^a	1

ENGL 160	Academic Writing I: Writing in Academic and Public Contexts	3
MATH 180	Calculus I	4
One of the following:		5
CHEM 122 & CHEM 123	Matter and Energy and Foundations of Chemical Inquiry I	
CHEM 116	Honors and Majors General and Analytical Chemistry I	
General Education course		3

Hours 15

Second Semester

CS 109	Programming for Engineers with MatLab	3
MATH 181	Calculus II	4
PHYS 141	General Physics I (Mechanics)	4
One of the following:		5
CHEM 124 & CHEM 125	Chemical Dynamics and Foundations of Chemical Inquiry II	
CHEM 118	Honors and Majors General and Analytical Chemistry II	

Hours 16

Second Year

First Semester

ENGL 161	Academic Writing II: Writing for Inquiry and Research	3
PHYS 142	General Physics II (Electricity and Magnetism)	4
CHE 201	Introduction To Thermodynamics	3
MATH 210	Calculus III	3
CHEM 222	Analytical Chemistry	4

Hours 17

Second Semester

CHE 205	Computational Methods in Chemical Engineering	3
CHE 210	Material and Energy Balances	4
MATH 220	Introduction to Differential Equations	3
CHEM 232	Structure and Function	3
CHEM 233	Synthesis Techniques Laboratory	2

Hours 15

Third Year

First Semester

CHE 301	Chemical Engineering Thermodynamics	3
CHE 311	Transport Phenomena I	3
CHEM 234	Chemical Synthesis	4
CHEM 342	Physical Chemistry I	3
ECE 210	Electrical Circuit Analysis	3

Hours 16

Second Semester

CHE 312	Transport Phenomena II	3
CHE 313	Transport Phenomena III	3

CHE 321	Chemical Reaction Engineering	3
CME 260	Properties of Materials	3
General Education Core Course		3
General Education Core Course		3
Hours		18

Fourth Year**First Semester**

CHE 330	Polymer Science	3
CHE 381	Chemical Engineering Laboratory I	2
CHE 396	Senior Design I	3 or 4
CHE 499	Professional Development Seminar	0
CHE 595	Seminar in Chemical Engineering Research (MS course work)	1
General Education course		3
400-level CHE Technical Elective		4
Hours		16-17

Second Semester

CHE 341	Chemical Process Control	3
CHE 382	Chemical Engineering Laboratory II	2
CHE 397	Senior Design II	4
CHE 595	Seminar in Chemical Engineering Research	1
400-level Elective outside the Major Rubric		4
General Education course		3
Hours		17

Fifth Year**First Semester**

CHE 501 or CHE 502	Advanced Thermodynamics or Fluid Phase Equilibria	4
CHE 520	Transport Phenomena	4
CHE 531 or CHE 545	Numerical Methods in Chemical Engineering or Mathematical Methods in Chemical Engineering	4
CHE 595	Seminar in Chemical Engineering Research (MS course work)	1
Hours		13

Second Semester

CHE 510 or CHE 511 or CHE 512	Separation Processes (MS course work) or Advanced Mass Transfer or Microhydrodynamics, Diffusion and Membrane Transport	4
CHE 527	Advanced Chemical Reaction Engineering (MS course work)	4
One of the following:		4
CHE 597	Project Research	
500-level CHE Elective or equivalent (MS course work)		
CHE 595	Seminar in Chemical Engineering Research	1
Hours		13

Total Hours	156-157
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