

Chemical Engineering 42000BS

The following information has official approval of the **College of Engineering**, but is intended only as a supplemental guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. *Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others.* The transfer process is completed through an appointment with your academic advisor.

Italicized courses fulfill General Education requirements. Unless a course is specified, refer to the General Education guide at http://www.uakron.edu/advising/docs/General_Education_Guide.pdf.

1 st Year	Fall Semester	Credit Hours	Prerequisites
3150:151	<i>Principles of Chemistry I Lecture and Recitation (Natural Science Requirement)</i>	3	Placement into 3450:149 or higher or permission
3150:152	<i>Principles of Chemistry I Lab (Natural Science Requirement)</i>	1	3150:151, corequisite
3450:221	<i>Analytic Geometry-Calculus I</i>	4	Placement Test or 3450:149 with C- or better
4200:101	Tools for Chemical Engineering	2	3450:149 (Precalculus) or higher and 4200:110, corequisites
4200:110	Project Management and Teamwork I	1	4200:101, corequisite
	<i>English Composition I Requirement</i>	3	Appropriate placement by advisor
	<i>Physical Education/Wellness</i>	1	
Total		15	

1 st Year	Spring Semester	Credit Hours	Prerequisites
3150:153	Principles of Chemistry II Lect and Recitation	3	3150:151
3150:154	Qualitative Analysis Lab	2	3150:152, prerequisites and 3150:153, co-requisite
3450:222	Analytic Geometry-Calculus II	4	3450:221 with C- or better
4200:121	Chemical Engineering Computations	2	4200:101
	<i>English Composition II Requirement</i>	3	3300:111 or equivalent
3250:244	<i>Introduction to Economic Analysis</i>	3	
Total		17	

2 nd Year	Fall Semester	Credit Hours	Prerequisites
4200:200	Material and Energy Balances*	4	3450:221, 3150:151, 4200:121 or 4250:105
4200:210	Project Management and Teamwork II	1	4200:110
3150:263	Organic Chemistry Lecture I	3	3150:153
3150:265	Organic Chemistry Lab	2	3150:154 prerequisite; 3150:263, corequisite
3150:265	Organic Chemistry Discussion	0	3150:263, corequisite
3450:223	Analytic Geometry-Calculus III	4	3450:222 with C- or better
3650:291	<i>Elementary Classical Physics I Lecture and Lab (Natural Science Requirement)</i>	4	3450:221
Total		18	

*A student must have a grade of C- or better in this course to complete the program.

2 nd Year	Spring Semester	Credit Hours	Prerequisites
4200:225	Equilibrium Thermodynamics	4	4200:200, 3450:223
3150:264	Organic Chemistry Lecture II	3	3150:263
3450:335	Introduction to Ordinary Differential Equations	3	3450:223 with C- or better
3650:292	Elementary Classical Physics II Lecture & Lab	4	3650:291
4300:201	Statics	3	3450:222, 3650:291, corequisites
Total		17	

3rd Year Fall Semester			
3150:313	Physical Chemistry Lecture I	3	3150:264, 3450:223, 3650:291
	Advanced Math Elective	2	
	<i>Speech/Oral Communication Requirement</i>	3	
4200:353	Mass Transfer Operations	3	4200:225 and C- or better in 4200:200 or 4250:200
4200:321	Transport Phenomena (Lecture and Recitation)	3	4200:200 or 4250:200 and 3450:335
4200:341	Process Economics	2	4200:200 or 4250:200
4200:310	Project Management and Teamwork III	1	4200:210 prerequisite and 4200:353 co-requisite
Total		17	

3rd Year Spring Semester			
3150:314	Physical Chemistry II	3	3150:264, 3450:335, 3650:292
4200:330	Chemical Reaction Engineering	3	4200:225 and 3450:335
4200:351	Fluid and Thermal Operations Lecture	3	4200:321
4200:305	Materials Science	2	3150:153 and 3650:292
4200:360	Chemical Engineering Lab and Lecture	3	4200:353, prerequisite 4200:330 and 4200:351, corequisites
	<i>Humanities Elective Requirement</i>	3	
Total		17	

4th Year Fall Semester			
3400:210 or 3400:221	<i>Humanities in the Western Tradition –OR– Humanities in the World Since 1300</i>	4	32 credit hours and 3300:112 equivalent 32 credit hours and 3300:112 equivalent
	Advanced Chemistry Elective	3	
4200:435	Process Analysis and Control	3	4200:330 and 4200:353
4200:441	Process Design I	3	4200:330, 4200:351, 4200: 353 and 4200:341
4200:410	Project Management and Teamwork IV	1	4200:310 prerequisite and 4200:441 or 4250:440 co-requisite
	<i>Social Science Requirement (not economics)</i>	3	
Total		17	

4th Year Spring Semester			
	<i>Area Studies / Cultural Diversity Requirement</i>	2-3	
	<i>Humanities Elective Requirement</i>	3	
4200:xxx	Chemical Engineering Elective	3	
4200:xxx	Design Elective	3	
4400:307	Basic Electrical Engineering	4	3650:292, prerequisite and 3450:335, corequisite
4200:442	Process Design II	3	4200:441
Total		18-19	

	Minimum Total Credits for Degree	137	
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ALERT: 1) By the end of your first 48 credit hours attempted, you should have completed your General Education English, Math, and Oral Communication (Speech) requirements; 2) By the end of your first 48 credit hours attempted, you should have declared a major and transferred to (been accepted by) a degree granting college at The University of Akron.

Chair of Chemical Engineering Department: Dr. H. Michael Cheung, Whitby Hall 211, (330) 972-7282
E-Mail: cheung@uakron.edu & Web Address: www.chemical.uakron.edu

SCHEDULING: No 4200 course in Chemical Engineering is available more than one term per year.
 Students should plan accordingly to minimize out-of-phase problems.

IN GENERAL: The purpose of the Chemical Engineering curriculum is to prepare men and women for professional careers in the practical application of chemistry, mathematics, and physics to develop e safe and cost effective ways of using materials and energy for the benefit of the human race.

SALARY LEVEL: Starting salary offers for new graduates range from \$38,000 to \$96,000 per year. The average is \$65,200.

JOB DESCRIPTION: Chemical Engineers enjoy every kind of employment. Most are concerned with complex industrial systems and are in demand by all segments of our society. Pharmaceuticals, polymers, petrochemicals, paints, paper, nuclear power, packaging, soap, textiles, tires, and beer are just a few of the materials which Chemical Engineers create, improve, produce, and sell.

JOB LOCALE: Chemical Engineers find acceptance in virtually every industrial classification because of their knowledge of materials and ability to deal with highly complex process systems. Opportunities are found in large and small companies, governmental agencies, and in one's own business.

TRANSFER TO COLLEGE OF ENGINEERING: To be admitted to the college, the student must:

- Complete at least 30 semester hours of coursework post high school
- Complete Calculus 2 with a C- or higher
- Have a 2.3 grade point average in at least three of the following categories:
 - in all coursework
 - in all engineering coursework
 - in all required mathematics coursework
 - in all required science coursework (chemistry, physics, computer science, biology)

Admission of students who do not meet the above requirements will be considered by the dean or representative only if the request originates by an Engineering department head or representative.

Students can arrange inter-college transfers through an appointment with their academic advisor; advisor contact information is listed in "My Akron."

CO-OP OPTION: Students can choose between a five-year program, which includes up to four semesters of co-op experience, or a four-year program without co-op experience. The Co-op Program provides an opportunity to gain real-world, relevant experience while working toward a bachelor's degree. Students who participate in the Co-op Program earn money to help fund their education, graduate with 12 or more months of career-related experience, and often receive a higher starting salary after graduation. More information about the Co-op Program can be found at engineering.uakron.edu/coop

PLACEMENT: The Engineering Co-op and Placement Office, ASEC 203, Akron, Ohio 44325 assists all graduates with full-time placement.

WOMEN AND MINORITY ENGINEERS: Eligible students are invited to register into the applicable engineering course elective. There are two options; 4100:110, Women in Engineering Seminar & Peer Group (Contact: Heidi Cressman, 330-972-7701, or hec9@uakron.edu). This course provides beginning women students an overview of the career opportunities for women in engineering. The course introduces relevant topics in engineering, an overview of career opportunities, student led discussion groups and an opportunity to meet with professionals in various engineering disciplines. The other option is 4100:120, Minority Engineering Seminar and Peer Groups (Contact: Julie Zhao, 330-972-2823, or zhao1@uakron.edu). This course provides an overview of disciplines and opportunities in engineering. It also reinforces educational/ career choices and provides role models of successful minority engineers.

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