Civil Engineering 430005BS with Co-Op

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

1st Year	**Fall Semester**	Credit Hours	Prerequisites
3150:151	*Principles of Chemistry I (Lecture and Recitation) (Natural Science Requirement)*	3	Placement into 3450:149 (Precalculus) or higher or permission
3150:152	*Principles of Chemistry I Lab (Natural Science Requirement)*	1	3150:151, corequisite
3450:221	*Analytic Geometry-Calculus I (Mathematics Requirement)*	4	Placement Test or 3450:149 (PreCalculus) with C- or better
4300:120	Intro. To Civil Design	2	
	Speech/Oral Communication Requirement	3	
	English Composition I Requirement	3	Appropriate placement by advisor
		16	

1st Year	**Spring Semester**		
3150:153	Principles of Chemistry II (Lecture And Rec.)	3	3150:151
3450:222	Analytic Geometry-Calculus II	4	3450:221 with C- or better
4300:101	Tools for Civil Engineering (Lect and Lab)	3	Corequisite: 3450:149 (PreCalculus) or higher
	English Composition Requirement	3	3300:111 or equivalent
	Physical Education Requirement	1	
	Social Science Requirement	3	
		17	

1st Year	**Summer Semester**		
	Optional Internship		

2nd Year	**Fall Semester**		
3450:223	Analytic Geometry-Calculus III	4	3450:222 with C- or better
3650:291	Elementary Classical Physics I (Lecture & Lab)	4	3450:221
4300:201	Statics (Lecture & Problem Session)	3	Corequisites: 3450:222 & 3650:291
4300:230 **OR** 2980:101 **OR** 3350:405	Surveying (Lecture & Lab) Basic Surveying (Lecture & Lab) Geographic Systems Information	3	3350:305 or permission
3370:105	Physical Geology for Engineers (Lecture & Lab)	3	
		17	

2nd Year	**Spring Semester**		
4300:202	Mechanics of Solids (Lecture and Problem)	3	4300:201
4600:203	Dynamics (Lecture and Problem)	3	3450:222, 3650:291, 4300:201 Corequistite:3450:223
3450:335	Introduction to Ordinary Differential Equations	3	3450:223 with C- or better
3650:292	*Elementary Classical Physics II (Lecture & Lab)(Natural Science Requirement)*	4	3650:291
4300:321	Intro to Environmental Engineering	3	3150:153, 3450:222
		16	

2nd Year	Summer Semester		
	Optional Co-Op		

3rd Year	Fall Semester		
4300:313	Soil Mechanics	3	4300:202
4300:306	Theory of Structures	3	4300:202
4300:380	Engineering Materials Lab (Lect and Lab)	3	4300:202
4600:310	Fluid Mechanics I (Lect and Problem)	2	4600:203 and 3450:335
3470:401 or 3470:461	Probability and Statistics for Engineers or Applied Statistics	2 or 4	3450:222 3450:222
	Area Studies/Cultural Diversity Requirement	2	
		15 or 17	

3rd Year	Spring Semester		
	Co-Op Assignment I		

3rd Year	Summer Semester		
4600:305	Thermal Science (Lecture and Problem)	2	3450:223 prerequisite, 3650:292 corequisite
	Social Science Requirement	3	
4300:xxx	Technical Elective*	3	
		8	

4th Year	Fall Semester		
	Co-Op Assignment II		

4th Year	Spring Semester		
4300:323	Water Supply and Pollution Control	3	4300:321
4300:314	Geotechnical Engineering (Lect and Lab)	3	4300:313
4300:401	Steel Design	3	4300:306
4300:361	Transportation Engineering	3	64 credits
4300:341	Hydraulic Engineering (Lect and Lab)	4	4600:310
	Humanities Elective Requirement	3	
		19	

4th Year	Summer Semester		
	Co-Op Assignment III		

5th Year	Fall Semester		
3400:210 or 3400:221	*Humanities in the Western Tradition OR* *Humanities in the World since 1300*	4	32 credit hours and 3300:112 equivalent 32 credit hours and 3300:112 equivalent
	Technical Elective*	3	
4300:390	Civil Engineering Seminar	1	Department Consent
4300:403	Reinforced Concrete Design	3	4300:306
4300:443	Applied Hydraulics	3	4300:341
		14	

5th Year	Spring Semester		
4300:471	Construction Administration	3	96 credits
4300:490	Senior Design	3	96 credits
4400:307	Basic Electrical Engineering	4	3650:292 prerequisite, 3450:335 corequisite
	Humanities Elective Requirement	3	
	Technical Elective*	3	
		16	

	Minimum Total Credits for Degree	**136 or 138**	

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.

*Students must select 6 credit hours of technical elective of which at least 3 credit hours must be from the Civil Engineering Department. Prerequisites vary for these courses. Please consult the Undergraduate Bulletin for course descriptions and prerequisites.

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DESCRIPTION OF PROFESSION: The degree in Civil Engineering prepares the graduate engineer for a career in engineering design and/or construction. There are five areas of Civil Engineering emphasized at Akron: Structural/Construction, concerned with the design of buildings, bridges, and other engineered structures; Environmental, chiefly concerned with water supply and with reduction of pollution from waste water, contaminated sediments and soils; Geotechnical, concerned with foundations of structures, embankments and interactions with the earth; Hydraulic Engineering, concerned with the utilization and control of water; and Transportation, concerned with planning and design of roads, airports and other transportation facilities, and with their efficient utilization. The curriculum is flexible enough to permit concentration in an area or a general emphasis on civil engineering.

CIVIL ENGINEERS find a wide range of employment opportunities. Civil engineers are employed by federal, state, county, and city governments. Others work for engineering consultants as designers, construction companies, transportation agencies and companies, oil and other energy companies, and for industrial companies as designers and managers of facilities. A wide range of specializations is available for graduate education. Holders of MSCE are especially sought by specialized consultants. Holders of the Ph.D. are employed by consultants, research organizations, and educational institutions.

SALARY LEVEL: Starting salary offers for new graduates average $49,324 per year. They range from $41,350 to $74,000.

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.

(Jackson)