CASE SCHOOL OF ENGINEERING
CASE WESTERN RESERVE UNIVERSITY

CIVIL ENGINEERING

Dual Degree Program Course Requirements

Engineering Requirements for all majors/departments		
Course Code	**Course Title**	**Semester Credit Hours**
CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 113	Principles of Chemistry Lab	2
ENGR 131	Elementary Computer Programming (JAVA)	3
MATH 121	Calculus for Science and Engineering I	4
MATH 122	Calculus for Science and Engineering II	4
MATH 223	Calculus for Science and Engineering III	3
MATH 224	Elementary Differential Equations	3
PHYS 121	General Physics I	4
PHYS 122	General Physics II	4
	Humanities and Social Science (including college level writing proficiency)	22
	Physical Education (2 semesters)	0
		55

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The Civil Engineering Department recommends that the following courses be taken prior to beginning the Dual Degree Program at Case Western Reserve University. If the courses cannot be fulfilled, they will be integrated into the curriculum, which may possibly extend the program timeline.

Recommended Engineering Courses for Civil Engineering

Course Code	Course Title	Semester Credit Hours	Description
ENGR 200	Statics and Strength of Materials	3	An introduction to the analysis, behavior and design of mechanical/structural systems. Course topics include: concepts of equilibrium; geometric properties and distributed forces; stress, strain and mechanical properties of materials; and, linear elastic behavior of elements. Prereq: PHYS 121.
EMAE 250	Computer in Mechanical Engineering	3	Numerical methods including analysis and control of error and its propagation, solutions of systems of linear algebraic equations, solutions of nonlinear algebraic equations, curve fitting, interpolation, and numerical integration and differentiation. Prereq: ENGR 131 and MATH 122.

Sample Course Sequence for Civil Engineering

Fall Year 1

Subject Code	Course Number	Course Title	Hours per Week: Class	Hours per Week: Lab	Semester Credit Hours
ECIV	310	Strength of Materials	3	0	3
ECIV	211	Civil Engineering Materials	1	3	3
ECIV	320	Structural Analysis I	3	0	3
ENGR	225	Thermo, Fluid Dynamics, Heat and Mass Transfer	4	0	4
ENGL	398N	Professional Communication	3	0	3
			14	3	16

Spring Year 1

Subject Code	Course Number	Course Title	Hours per Week: Class	Hours per Week: Lab	Semester Credit Hours
ECIV	322	Structural Design I	2	2	3
ECIV	330	Soil Mechanics	3	2	4
ECIV	351	Engineering hydraulics and Hydrology	3	0	3
ECIV	368	Environmental Engineering	2	2	3
		Approved Elective	3	0	3
			13	6	16

Fall Year 2

Subject Code	Course Number	Course Title	Hours per Week: Class	Hours per Week: Lab	Semester Credit Hours
ECIV	160	Surveying and Computer Graphics	2	3	3
ECIV	340	Construction Management	3	0	3
ECIV	398	Civil Engineering Senior Project	0	6	3
EMSE	201	Introduction to Materials Science and Engineering	3	0	3
		Approved Elective	3	0	3
		Approved Elective	3	0	3
			14	9	18

Spring Year 2

Subject Code	Course Number	Course Title	Hours per Week: Class	Hours per Week: Lab	Semester Credit Hours
ENGR	210	Introduction to Circuits and Instrumentation	3	2	4
ECIV	360	Civil Engineering Systems	3	2	3
EMAE	181	Dynamics	3	0	3
PHYS	221	Introduction to Modern Physics	4	0	3
		(or) Approved Natural Science Elective	-	-	-
		Approved Elective	3	0	3
			16	4	16

Please Note: The course sequence serves as an example of the classes necessary to complete the Dual Degree Program. Courses and the semesters taken will be based on the student's transfer credit and discussion with the Case Western Reserve University faculty advisor.