

UMSL/Washington University Joint Engineering Undergraduate General Requirements

A program of 135 semester hours is required for the Bachelor of Science in Civil Engineering, a program of 122 semester hours is required for the Bachelor of Science in Electrical Engineering, and a program of 134 semester hours is required for the Bachelor of Science in Mechanical Engineering, as shown below:

- All majors must complete the [University General Education requirements](#), the Pre-Engineering Requirements and the Core Engineering Requirements.
- All students must first complete [J E MATH 3170](#), Engineering Mathematics, with a minimum grade of C-.
- Mechanical and Electrical Engineering majors must also complete [J E ENGR 2300](#), Introduction to Electrical Networks with a minimum grade of C-.
- Civil engineering majors must complete either [J E ENGR 2300](#), Introduction to Electrical Networks, or [J M ENGR 3200](#) Thermodynamics, with a minimum grade of C-.
- A minimum grade of C- is necessary to meet the prerequisite requirement for any course.

Pre-Engineering Requirements

Students seeking to major in engineering are first designated as 'Undeclared with an interest in Engineering majors' until they have completed Math 1800 Analytical Geometry & Calculus I. Upon successful completion of Math 1800 with a grade of C or better, students will be allowed to declare preengineering as their major. Math 1800 must be completed successfully within two attempts. ~~Pre-Engineering Requirements~~

MATH 1800	Analytic Geometry And Calculus I	5
MATH 1900	Analytic Geometry And Calculus II	5
MATH 2000	Analytic Geometry And Calculus III	5
MATH 2020	Introduction To Differential Equations	3
CHEM 1111	Introductory Chemistry I	5
PHYSICS 2111	Physics: Mechanics And Heat	5
PHYSICS 2112	Physics: Electricity, Magnetism, And Optics	5
ENGR 2310	Statics	3
ENGR 2320	Dynamics	3
ENGL 1100	First-Year Writing	3
Total Hours		42

Civil engineering majors must complete [GEOL 1001A](#), General Geology as part of the pre-engineering requirements.

General Education Requirements

PHIL 2259	Engineering Ethics	3
PHIL 3380	Philosophy Of Science	3
One additional Humanities course ¹		3

<u>HIST 1001</u>	American Civilization To 1865	3
or <u>HIST 1002</u>	American Civilization 1865 To Present	
or <u>HIST 1004</u>	The History Of Women In The United States	
Two additional Social Science courses ¹		6

Once One course must meet the Cultural Diversity requirement, and one course must meet the engineering Valuing Skill requirement. Humanities and social sciences electives must meet both the University of Missouri-St. Louis General Education Requirements and the Humanities and Social Sciences Requirements of the Joint Undergraduate Engineering Program. Check with your advisor for details.

Engineering Core Requirements

<u>J CMP SC 1002</u>	Introduction To Computing Tools: Matlab Skills	1
<u>CMP SCI 1250</u>	Introduction To Computing	3
<u>J E MATH 3170</u>	Engineering Mathematics	4
<u>ENGL 3130</u>	Technical Writing	3
<u>J M ENGR 3200</u>	Thermodynamics ¹	3
<u>J M ENGR 4310/J E ENGR 4410</u>	Control Systems I ¹	3
<u>J E ENGR 2300</u>	Introduction To Electrical Networks ¹	3
<u>J E ENGR 2330</u>	Electrical And Electronic Circuits Laboratory ¹	3
Total Hours		23

¹ Required for electrical and mechanical engineering majors only.

Sign-offs from other departments affected by this proposal

None

Rationale **Better student retention.**