Bachelor of Science in Computer Engineering

Computer engineering encompasses studies of hardware, software, and systems issues that arise in the design, development, and application of computer systems. Computer engineers are particularly well suited to address the particular challenges that exist as computing systems interact with the real, physical world. This includes sensing, actuation, timing, security, and computing systems with widely varying form factors, ranging from servers to mobile devices to the "internet of things." The degree requires 120 units including core courses, technical electives, a capstone course, and common studies.

The Bachelor of Science in Computer Engineering degree is jointly administered by the Department of Computer Science and Engineering and the Department of Electrical and Systems Engineering.

Students working toward a Bachelor of Science in Computer Engineering degree must meet all requirements for an engineering degree (http://bulletin.wustl.edu/undergrad/engineering/requirements/) from the McKelvey School of Engineering. Required courses and technical electives cannot be taken on a pass/fail basis.

- **Core Requirements*:**

The following courses are required of all computer engineering students:

Code	Title	Units
CSE 131	Introduction to Computer Science	3
CSE 132	Introduction to Computer Engineering	3
CSE 247	Data Structures and Algorithms	3
CSE 260M	Introduction to Digital Logic and Computer Design	3
or ESE 260	Introduction to Digital Logic and Computer Design	
CSE 361S	Introduction to Systems Software	3
CSE 362M	Computer Architecture	3
ESE 105	Introduction to Electrical and Systems Engineering	4
ESE 230	Introduction to Electrical and Electronic Circuits	4
ESE 232	Introduction to Electronic Circuits	3
ESE 326	Probability and Statistics for Engineering	3
Total Units		**32**

* Each of these core courses must be passed with a grade of C- or better.

- **Technical Elective Requirements:**

At least 21 units of technical electives, drawn from either of the following:

- CSE courses with the suffix S, M, T or A; CSE 347
- ESE courses at the 300 level or higher; ESE 205

The above can include courses at the graduate level; however, they must still meet one of the two criteria above. Up to 6 units of independent study (CSE 400E, CSE 497-CSE 499, ESE 400, ESE 497) can count toward technical electives. There is no limit as to how many independent study courses can count toward the general 120 units.

- **Capstone Requirement:**

The capstone requirement can be met by taking either CSE 462M or ESE 498.

- **Common Studies Requirements:**

Code	Title	Units
Math 131	Calculus I	3
Math 132	Calculus II	3
Math 217	Differential Equations	3
Math 233	Calculus III	3
Physics 191	Physics I	3
Physics 191F	Physics I — First-Years Only	
Physics 191U	Physics I — Sophomores, Juniors, and Seniors Only	
Physics 191L	Physics I Laboratory	1
Physics 192	Physics II	3
Physics 192L	Physics II Laboratory	1
Natural sciences elective		3
College Writing		3
Engr 310	Technical Writing	3
Humanities and social sciences electives		18
Total Units		**47**

Upon completing a course in the calculus sequence (Math 131-Math 132-Math 233) with a grade of C+ or better, the student may apply to receive credit for the preceding courses in the calculus sequence by following the mathematics and statistics department's back credit policy (https://artsci.wustl.edu/resources/back-credit-policy/).

The natural sciences requirement is for 3 units designated NSM (Natural Sciences and Mathematics) from any of the following departments: Anthropology, Biology, Chemistry, Earth and Planetary Sciences, Environmental Studies or Physics. These courses must be completed with a grade of C- or better.

The College Writing Program, humanities and social sciences requirements are those required of all students in the McKelvey School of Engineering.