

The Second Major in Systems Science & Engineering

A second major in systems science and engineering is ideal for study in many areas, including physics, chemistry, economics, finance, supply chain management and computational biology. Students in the McKelvey School of Engineering as well as the other undergraduate divisions at Washington University have the opportunity to pursue a second major in systems science and engineering in the Preston M. Green Department of Electrical & Systems Engineering in the McKelvey School of Engineering. Students are not allowed to add this second major to either the BS in SSE or the BS in Applied Science (SSE).

The requirements for a second major in systems science and engineering are as follows:

Code	Title	Units
ESE 105	Introduction to Electrical and Systems Engineering	4
ESE 2180	Linear Algebra and Component Analysis	3
ESE 2190	Vector Calculus and Dynamics of Physical Systems	3
ESE 230	Introduction to Electrical and Electronic Circuits	4
ESE 326	Probability and Statistics for Engineering	3
ESE 351	Signals and Systems	3
ESE 4031 or ESE 415	Optimization for Engineered Planning, Decisions and Operations Optimization	3
ESE 441	Control Systems	3
CSE 131	Introduction to Computer Science	3
Total Units		29

In addition, 18 units of ESE courses in the systems area are to be chosen from the following list: ESE 205, ESE 2971, ESE 400 through 428, ESE 437, ESE 440 through 459, ESE 470 through 499, ESE 502 through 529, ESE 540 through 559, SWCD 5660

Students may petition to substitute systems-oriented courses from other disciplines in Arts & Sciences for two of these six courses (for example, courses in computational physics, econometrics or computational mathematics).

Within this second major in systems science and engineering, areas of concentration are possible in robotics, control systems and operations research.

For more information, contact the director of the program, Shen Zeng.