

Master of Science in Systems Science & Mathematics (MSSSM)

Either a thesis option or a course option may be selected. The special requirements for these options are as follows:

Course Option

The Master of Science in Systems Science & Mathematics (MSSSM) is an academic master's degree that requires the completion of 30 credit units. It is designed for both full-time and part-time students interested in proceeding to the departmental full-time doctoral program and/or an industrial career. Under the course option, students may not take ESE 599 Master's Research. With faculty permission, they may take up to 3 units of graduate-level independent study.

Thesis Option

This option is intended for those pursuing full-time study and engaged in research projects. Candidates for this degree must complete a minimum of 24 credit units of course instruction and 6 credit units of thesis research (ESE 599); 3 of these units of thesis research may be applied toward the 15 core electrical engineering units required for the MSEE program. Any of these 6 units of thesis research may be applied as electives for the MSEE, MSSSM, and MSDAS programs. The student must write a master's thesis and defend it in an oral examination.

Degree Requirements

- Required courses (15 units) for the MS degree include the following:

Code	Title	Units
ESE 551	Linear Dynamic Systems I	3
ESE 553	Nonlinear Dynamic Systems	3
ESE 520	Probability and Stochastic Processes	3
ESE 415	Optimization *	3
and one course chosen from the following:		
ESE 524	Detection and Estimation Theory	3
or ESE 544	Optimization and Optimal Control	
or ESE 545	Stochastic Control	
or ESE 557	Hybrid Dynamic Systems	
Total Units		15

* ESE 513 may be substituted.

- The remaining courses in the program may be selected from senior or graduate-level courses in ESE or elsewhere in the university that are approved by the department. Please consult the ESE departmental website (<https://ese.wustl.edu/graduate/degreeprograms/Pages/ms-systems-science-mathematics.aspx>) for a list of allowable electives.
- A maximum of 6 units may be transferred from another institution and applied toward the master's degree.
- ESE 590 Electrical & Systems Engineering Graduate Seminar must be taken by full-time graduate students each semester. This course is taken with an unsatisfactory/satisfactory grade option.
- The degree program must be consistent with the residency and other applicable requirements of Washington University and the McKelvey School of Engineering.
- Students must obtain a cumulative grade-point average of at least 3.0 out of a possible 4.0 overall for courses applied toward the degree. Courses that apply toward the degree must be taken with the credit/letter grade option.