

University of Virginia
Department of Engineering Systems and Environment
Systems Engineering

MASTER OF ENGINEERING HANDBOOK

Any student enrolled in the ME program prior to the Fall 2019 semester has the option of adhering to either (a) the curriculum presented below or (b) the curriculum that was effective when the student first enrolled in the ME program.

1. OVERVIEW

The MASTER OF ENGINEERING (M.E.) is a graduate professional degree for those wishing to pursue careers in industry, consulting, or government. Our program is designed to provide a blend of fundamental knowledge and professional skills needed by practicing systems engineers, management engineers, and entrepreneurial engineers.

It is an intensive, non-thesis, 12-month program built of three components.

- *Core courses* supplying the fundamentals of systems engineering.
- *Elective courses* focusing on techniques of analysis and application of fundamentals to a problem area.
- *Participation* in the intellectual life of the University.

2. DEGREE REQUIREMENTS

A candidate for the Master of Engineering degree must fulfill the general requirements of the School of Engineering and Applied Science and must complete an approved plan of study consisting of at least 30 credit hours. VEO students should follow the requirements of a regular on-grounds ME student.

3. FACULTY ADVISOR

Upon admission to the program, the student is assigned a faculty advisor by the Graduate Programs Director. The student should meet with the advisor to initiate a planning effort before the start of each semester.

4. PLAN OF STUDY

4.1 The Nominal Plan

The plan of study must be prepared under the guidance of the faculty advisor by the end of the first semester of study. Then it must be approved by the Graduate Programs Director.

The approved plan of study may be revised if necessary; the new plan must be submitted for approval.

The nominal plan of study is shown in the exhibit. A full-time student, who meets all the prerequisites (calculus, linear algebra, probability and statistics, computer programming) and enters the program in the Fall semester, should be able to fulfill the degree requirements in 1 academic year.

4.2 The Required Credits

The plan of study must include at least 30 credit hours of graduate-level work and must satisfy the following requirements.

9 credit hours of *core courses*: SYS 6001 + 6 hours from the following SYS 6003, SYS 6005, SYS 6007 and SYS 6021.

21 or more credit hours of *elective courses* distributed thusly:

- At least 12 credit hours of systems engineering courses at the 6000 or 7000 level. [These credit hours cannot be earned through Independent Study SYS 6993 and SYS 7993, Supervised Project Research SYS 6995 and SYS 8995, Graduate Teaching Instruction SYS 8997 and SYS 9997, Thesis SYS 8999, and Dissertation SYS 9999.]
- No more than 3 credit hours of Independent Study SYS 6993 or SYS 7993.
- No more than 3 credit hours of Supervise Project Research SYS 8995.
- No more than 3 credit hours at the 5000 level from the School of Engineering and Applied Science. [The 5000-level courses in the Graduate School of Arts and Sciences are nominally equivalent to 6000-level courses in the School of Engineering and Applied Science.]

NOMINAL PLAN OF STUDY FOR MASTER OF ENGINEERING

Fall Semester

Credit

SYS 6001	Introduction to Systems Engineering	3
SYS 6003	Mathematical Programming	3
SYS 6005	Stochastic Systems	3
SYS xxxx	Systems Engineering Elective	3
... ..	Elective	<u>3</u>
		15

Spring Semester

SYS xxxx	Systems Engineering Elective	3
SYS xxxx	Systems Engineering Elective	3
SYS xxxx	Systems Engineering Elective	3
... ..	Elective	3
... ..	Elective	<u>3</u>
		15

Minimum total number of credit hours 30

4.3 Special Circumstances

Prerequisites. The student who does not have the prerequisites (calculus, linear algebra, probability and statistics, computer programming) should take articulation courses. These courses cannot be used to satisfy the degree requirements.

Equivalent Courses. The student who, prior to enrolling in our graduate program, has already taken a course equivalent to a core course, may petition the Graduate Programs Director for the substitution of the core course by an elective course.

Transfer Credit. Up to 12 credit hours of graduate courses may be transferred. Only courses with a grade of B or better which have not been applied towards another degree may be transferred. The request for credit transfer must include the following documents: a description of course content and level, an official transcript, and a statement by the student certifying that the course has not been used to satisfy requirements for another degree. If the student is already admitted into a program at the University of Virginia, then the request for credit transfer must be pre-approved before the course is taken.

VEO students may transfer up to 15 credits from other schools participating in the VEO program toward their ME degree from the University of Virginia. The other VEO institutions are; George Mason University, Old Dominion University, Virginia Commonwealth University, and Virginia Polytechnic Institute (Virginia Tech).

5. APPLICATION FOR THE DEGREE

Students must apply for graduation in SIS (Deadlines: February 1 for spring, June 1 for summer or October 1 for fall).

The student must be enrolled during the semester in which the application for the degree is submitted.

6. ADMINISTRATIVE FORMS

All administrative requirements that must be met before graduation in the School of Engineering and Applied Science may be found at <https://engineering.virginia.edu/current-students/current-graduate-students>

University of Virginia
Department of Engineering Systems and Environment
151 Engineer's Way
P.O. Box 400747
Charlottesville, VA 22904-4747

August 2019