

M.S. in Systems Engineering

The Master of Science in System Engineering requires a minimum of 30 credit hours, and can be accomplished either through the Project Practicum degree plan or the Thesis degree plan.

Admission Requirements

Students should consult the *College of Engineering* section in the *Graduate Catalog* for information on general admission requirements. Applicants are expected to have a Bachelor of Science in an engineering or computing field or related physical science or the equivalent.

Students apply through the Graduate School, submitting an application form and the following supporting materials:

- Official transcripts of all previous academic work.
- Applicants whose degrees are from non-English speaking institutions are required to demonstrate English proficiency. Please consult the Graduate School (<https://www.utep.edu/graduate/future-students/applicant-timelines.html>) website for required scores.
- Personal Statement of Purpose
- Letters of Recommendation, including one from the company sponsoring the student (if appropriate).
- Other evidence of relevant personal or professional experience.

Recommendations for admissions will be made on the basis of the following:

- Grade point average on the upper-division or graduate work as appropriate.
- Professional commitment and interest as demonstrated by the personal statement and other supporting materials as available.
- Letters of recommendation.

Depending on selected areas of concentration, students might need to complete leveling coursework at the undergraduate or graduate level. Leveling courses will not be counted towards either MSSE degree plan.

The MSSE is a minimum 30-semester-credit-hour (SCH) program, which can be accomplished either through the Project Practicum plan or the Thesis degree plan.

Required Coursework

Each student is expected to have core knowledge in key areas of Systems Engineering. All students are required to complete the following five core courses (15 SCH) with a B average or better and with no more than one C:

Code	Title	Hours
SE 5341	Systems Engr Fundamentals	3
SE 5342	Systems Engr Management	3
SE 5343	Systems Requirements Analysis	3
SE 5344	Sys Intgrtn, Verfctn, & Valdtn	3
SE 5345	Sys Engr Project Practicum	3
Total Hours		15

MSSE Project Practicum Option

Code	Title	Hours
Required Core:		
SE 5341	Systems Engr Fundamentals (Required Core:)	3
SE 5342	Systems Engr Management	3
SE 5343	Systems Requirements Analysis	3
SE 5344	Sys Intgrtn, Verfctn, & Valdtn	3
SE 5345	Sys Engr Project Practicum	3

Required Concentration Track:

9 Credit Hours of graduate courses from 1 engineering department

Free Electives:

6 Credit hours of graduate courses from the College of Engineering, Science, or Business Administration

30 Credit Hours minimum total

MSSE Thesis Option

Code	Title	Hours
Required Core:		
SE 5341	Systems Engr Fundamentals	3
SE 5342	Systems Engr Management	3
SE 5343	Systems Requirements Analysis	3
SE 5344	Sys Intgrtn, Verfctn, & Valdtn	3
SE 5345	Sys Engr Project Practicum	3
Required Thesis Track:		
SE 5398	Thesis I	3
SE 5399	Thesis II	3
Free Electives:		
9 Credit hours of graduate courses from the Colleges of Engineering, Science, or Business Administration		
30 Credit Hours minimum total		

Note: Some courses might require MSSE students to satisfy pre-requisite course work and/or seek departmental approvals before registration.

Degree Plan

Required Credits: 30

Code	Title	Hours
MS in Systems Engineering Core (All courses require a grade of C or better)		
Required Courses:		
SE 5341	Systems Engr Fundamentals	3
SE 5342	Systems Engr Management	3
SE 5343	Systems Requirements Analysis	3
SE 5344	Sys Intgrtn, Verfctn, & Valdtn	3
SE 5345	Sys Engr Project Practicum	3
MS in Systems Engineering Program (All courses require a grade of C or better)		
Select an Area of Concentration		9
Graduate Coursework:		
Select six hours of graduate coursework from the College of Engineering, Science or Business		6
Total Hours		30

Area of Concentration

Systems of Engineering

Code	Title	Hours
SE 5346	Systems Architecture & Design	3
or EE 4364	Systems and Controls	
SE 5347	Systems Engr Processes	3
SE 5348	Systems Modeling & Simulation	3
or ECE 5390	Special Topics Electrical Engr	
Total Hours		9

Electrical Engineering

Code	Title	Hours
ECE 4338	Systems and Controls	3
ECE 5380	Linear Systems Analysis	3
Select one of the following:		3
ECE 5371	Data Communications	
ECE 5322	Adv Fiber Optic Communications	

ECE 5390	Special Topics Electrical Engr	
Total Hours		9

Computer Science

Code	Title	Hours
CS 5317	Human-Computer Interaction	3
or CS 5382	Model-Based Software Devlpmnt	
CS 5390	Special Topic Computer Science	3
Select one of the following:		3
CS 5352	Computer Security	
CS 5381	Topics in Software Engineering	
Total Hours		9

Industrial Engineering

Code	Title	Hours
IE 5330	Course currently in degree plan, but no longer offered. Please see advisor for substitution.	3
IE 5385	Advanced Quality Control	3
IE 5357	Computer Simulation Appli	3
or IE 5387	Quality Engineering	
Total Hours		9

Manufacturing Engineering

Code	Title	Hours
MFG 5311	Design for Manufacturability	3
MFG 5321	Modeling/Analysis-Mfg Process	3
or MFG 5359	Computer-Aided Manufacturing	
MFG 5312	Strategic Design-Mfg Processes	3
or MFG 5350	Reliability & Maintainability	
Total Hours		9

Thesis Option

Code	Title	Hours
SE 5398	Thesis I	3
SE 5399	Thesis II	3
Select three hours of graduate coursework from the Colleges of Engineering, Science or Business Administration		3
Total Hours		9