MASTER OF SCIENCE IN SYSTEMS ENGINEERING

Plan B
Effective Fall 2025

Code	Title	Credits
Courses in Depth - Select 15 credits:		**15**
ENGR 502	Engineering Project and Program Management	
or CIS 600A	Project Management: Information Technology	
or CIS 670	Advanced IT Project Management	
ENGR 510	Engineering Optimization: Method/ Application	
ENGR 520	Intelligent Decision Support Systems	
ENGR 525	Intellectual Property and Invention Systems	
ENGR 531	Engineering Risk Analysis	
ENGR 533	Spaceflight and Biological Systems	
ENGR 535	Modeling Human Systems Behavior	
ENGR 540	Design Analysis of Engineering Experiments	
ENGR 546	AR/VR Biometrics and Sensing for Training	
ENGR 565/ ECE 565	Electrical Power Engineering	
ENGR 570	Coupled Electromechanical Systems	
MECH 513	Simulation Modeling and Experimentation	
ECE 566	Grid Integration of Wind Energy Systems	
SYSE 501	Foundations of Systems Engineering	
SYSE 505	Systems Thinking for the Real World	
SYSE 511	Control Engineering for System Engineers	
SYSE 512	Systems Sensing and Imaging Analysis	
SYSE 530	Overview of Systems Engineering Processes	
SYSE 532/ ECE 532	Dynamics of Complex Engineering Systems	
SYSE 534	Human Systems Integration	
SYSE 536	Space Mission Analysis and Design	
SYSE 541	Engineering Data Design and Visualization	
SYSE 544	Systems-Based AR/VR Environmental Realism	
SYSE 545	Augmented/Virtual Reality Systems Development	
SYSE 548	Security Engineering for Systems Engineers	
SYSE 549	Secure Vehicle and Industrial Networking	
SYSE 555	Transitions in Energy Systems	
SYSE 567	Systems Engineering Architecture	
SYSE 569	Cybersecurity Awareness for Systems Engineers	
SYSE 571	Analytics in Systems Engineering	
SYSE 573	Cost Optimization for Systems Engineers	
SYSE 602	Systems Requirements Engineering	
SYSE 603	Introduction to Systems Test and Evaluation	
SYSE 667	Advanced Model-Based Systems Engineering	
Technical Electives [1]		**12**
Research		
SYSE 695	Independent Study [2]	3
Program Total Credits:		**30**

A minimum of 30 credits are required to complete this program.

1. Select technical elective credits with approval by student's advisor. SE Department maintains an extensive list of possible suggested electives, or new courses may be approved on an individual basis. A maximum of 6 credit hours are permitted at the 400-level. The remainder must be at the 500-level or above.
2. SYSE 695 requires the student to complete a systems engineering project, in collaboration with a faculty member, with a formal report on the results. This culminating project will incorporate a range of skills learned in SE coursework, and can be academic or applied in nature. The project is evaluated by the student's committee to meet the scholarly expectations for a Plan B degree.