

Master of Engineering in Systems Engineering (MENG in SYSEN) Required and Elective Courses

The Master of Engineering in Systems Engineering degree will be awarded upon successful completion of the 36-credit program, and completion of [SARI](#).* The courses are not listed in sequential order. All module course work is subject to change as new courses are developed or renumbered.

The capstone course, SYSEN 594, is to be taken at or near the end of all coursework.

If you have any questions throughout your studies, please email EngHelp@psu.edu.

18-Credit Required Curriculum				
Course #	Course Titles	Campus	Semester	Grade
SYSEN 520	Systems Engineering	WC		
SYSEN 522	Systems Verification, Validation and Testing	WC		
SYSEN 532	Simulation in Systems Engineering: Discrete-Time Systems	WC		
SYSEN 534	Simulation in Systems Engineering: Continuous-Time Systems	WC		
SYSEN 880	Systems Architecture and Models	WC		
SWENG 886	Requirements Engineering (<i>Formerly SWENG 586</i>)	Great Valley		
15-Credit Elective Curriculum				
Course #	Course Titles	Campus	Semester	Grade
3-Credit Required Capstone (to be taken near end of the program) <i>Email EngHelp@psu.edu for availability</i>				
SYSEN 594	Master's Research Paper- A 3-credit Professional Paper OR Advanced Systems Engineering Studio – Under general direction of faculty, students work on a systems project individually or in teams	Great Valley		
SARI Requirement Scholarship and Research Integrity				
SARI	Scholarship and Research Integrity Program			

***NOTE: Students must maintain a minimum grade point average of 3.0 (B) throughout the program. A 3.0 cumulative GPA is required to graduate. All course work toward the Master of Engineering in Systems Engineering degree must be completed within eight years of admission to the program.**

Questions & Advising - Students should contact their assigned faculty advisors with any questions or for advice on course selection. Students considering taking online classes must get approval from their academic advisor before requesting enrollment through EngEnrollmentRequests@psu.edu.

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15-Credit Electives (*Choose 5 courses from the following*)

A-I 500	Quantitative Methods
A-I 801	Foundations of Artificial Intelligence (Prerequisite: A-I 500)
DAAN 846	Network and Predictive Analytics for Socio-Technical Systems
DAAN 862	Analytics Programming in Python (Prerequisite: A-I 500)
DAAN 871	Data Visualization for Analytics
DAAN 881	Data-Driven Decision Making (Prerequisite: A-I 500. DAAN 501 is NOT a prerequisite)
ENGMT 501	Engineering Management Science
ENGMT 510	Economics and Financial Studies for Engineers
IE 575	Foundations of Predictive Analytics (Prerequisite: A-I 500)
INSC 831	Contemporary Information Systems Architecture
STS 589	Ethics and Values in Science and Technology (<i>offered online only</i>)
SYSEN 507	Systems Thinking (<i>offered online only</i>)
SYSEN 555	Invention and Creative Design (Recommended: SYSEN 850 before taking SYSEN 555)
SYSEN 536	Decision and Risk Analysis in Engineering
SYSEN 805	Technical Project Management
SYSEN 850	Creativity and Problem Solving I

Graduate Certificate Program

Students in the SYSEN Program can earn four related graduate certificates while working towards their degree. It's a great way to gain new skills and add valuable credentials to your résumé. Students who successfully complete graduate certificates will also be awarded a Digital Badge for each

Technical Management (MENGTM): SYSEN 507, SYSEN 805, SYSEN 850

System Quality and Risk Evaluation (MENGSQ): SYSEN 520, SYSEN 522, SYSEN 536

System Modeling and Analysis (MENGSM): SYSEN 532, SYSEN 534, SYSEN 880

Life Cycle System Design (MEMLCD): SYSEN 555, SYSEN 886, SYSEN 880