

## 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](#).<sup>\*</sup> 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.**

***The courses below are for students who start the Master of Systems Engineering in FALL 2024 or LATER.***

**If you have any questions throughout your studies, please email [EngHelp@psu.edu](mailto: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)				
Email <a href="mailto:EngHelp@psu.edu">EngHelp@psu.edu</a> for availability				
SYSEN 594	<b>Master's Research Paper</b> -A 3-credit Professional Paper <b>OR</b> <b>Advanced Systems Engineering Studio</b> – Under general direction of faculty, students work on a systems project individually or in teams	Great Valley		
SARI Requirement				
Scholarship and Research Integrity				
<a href="#">SARI</a>	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.

## Master of Engineering in Systems Engineering (MENG in SYSEN)

### Program Electives

<b>15-Credit Electives (Choose 5 courses from the following)</b>	
<b>Data Analytics</b>	
STAT 500	Applied Statistics
DAAN 871	Data Visualization for Analytics
IE 575	Foundations of Predictive Analytics ( <i>Prerequisite: STAT 500</i> )
DAAN 846	Network and Predictive Analytics for Socio-Technical Systems
DAAN 881	Data-Driven Decision Making ( <i>Prerequisite: STAT 500. DAAN 501 is NOT a prerequisite</i> )
<b>Cyber Threat Analytics and Prevention</b>	
INSC 831	Contemporary Information Systems Architecture
DAAN 846	Network and Predictive Analytics for Socio-Technical Systems
DAAN 871	Data Visualization for Analytics
<b>Technical Management</b>	
SYSEN 507	Systems Thinking ( <i>offered online only</i> )
SYSEN 805	Technical Project Management ( <i>Previously SYSEN 505</i> )
SYSEN 850	Creativity and Problem Solving 1 ( <i>Previously SYSEN 550. Offered online only</i> )
SYSEN 552	Creativity and Problem Solving II ( <i>Prerequisite: SYSEN 850. Offered online only</i> )
STS 589	Ethics and Values in Science and Technology ( <i>offered online only</i> )
SYSEN 555	Invention and Creative Design ( <i>Recommended: SYSEN 850 before taking SYSEN 555</i> )
<b>Quantitative Decision-Making for Engineering Managers</b>	
ENGMT 501	Engineering Management Science
ENGMT 510	Economics and Financial Studies for Engineers
SYSEN 536	Decision and Risk Analysis in Engineering
<b>Quality Management Across Product Life Cycle</b>	
STAT 500	Applied Statistics
ENGMT 520	Systems Optimization ( <i>Previously SYSEN 530. Offered online only</i> )
ENGMT 841	Application of Statistics in Quality and Continuous Improvement in Engineering
<b>Foundations of Artificial Intelligence</b>	
AI 801	Foundations of Artificial Intelligence
STAT 500	Applied Statistics
IE 575	Foundations of Predictive Analytics ( <i>Prerequisite: STAT 500</i> )
DAAN 862	Analytics Programming in Python