

Expected Course Offerings

Systems Engineering

The schedule below is based on historical patterns and expected scheduling. The semester and location in which a course may be offered is **subject to change** due to instructor availability, student demand, and the need to provide an appropriate balance of subjects and course levels in all semesters. Courses may be offered at the Applied Physics Laboratory (APL) (3VL), online (O), or Virtual Live (8VL), as indicated.

Course #	Course Name	Pre-Req*	Summer	Fall	Spring
Core Courses					
645.662	Introduction to Systems Engineering	None	O	O, 8VL	O, 8VL
645.667	Management of Systems Projects	None	O, 8VL	O, 8VL	O, 8VL
645.764	Software Systems Engineering	662, 667	O	O, 3VL	O, 3VL
645.767	System Conceptual Design	662, 667	O, 8VL	O, 8VL	O, 8VL
645.768	System Design & Integration	662, 667, 764, 767	O	O, 8VL	O, 8VL
645.769	System Test & Evaluation	662, 667, 764, 767, 768	O	O, 8VL	O, 8VL
645.800	Systems Engineering Project	662, 667, 764, 767, 768, 769	O	O, 8VL	O, 8VL
	OR				
645.801/802	Systems Engineering Thesis	662, 667, 764, 767, 768, 769	O	O	O
Systems Electives					
645.669	Systems Engineering of Deployed Systems	662 or 667		O	
645.671	AI for Systems Engineering		8VL	8VL	8VL
645.742	Management of Complex Systems	662, 667, 764, 767, 768, 769	O	O	
645.753	Enterprise Systems Engineering	662, 667, 764, 767, 768, 769	O		O
645.761	Systems Architecting	662, 667, 764, 767, 768, 769		O	O
645.766	Systems Engineering Advanced Technology	662, 667	8VL	8VL	8VL
645.771	System of Systems Engineering	662, 667, 764, 767, 768, 769		O	O
645.772	Systems Innovation (New - Summer 2026)	662, 667	8VL		O
645.780	Agile Systems Engineering	662	O		O
645.781	Systems Thinking and Systems Dynamics	662, 767	O	O	
645.783	Systems Engineering Process Improvement			O	O
Human Systems Electives					
635.661	Principles of Human Computer Interaction	662	See Cybersecurity Offerings		
645.621	Engineering and Measuring Influence			O	O
645.650	Foundations of Human Systems Engineering			O	O
645.651	Integrating Humans and Technology	662		O	O
Modeling and Simulation Electives					
625.603	Statistical Methods and Data Analysis	Multivariate calculus	See Applied & Computational Math Offering page for Schedule		
645.631	Introduction to Model Based Systems Engineering	662	O	O	O
645.632	Applied Analytics for Model Based Systems Engineering	631		O	O
645.757	Foundations of Modeling and Simulation in SE	662			O
645.758	Advanced Systems Modeling and Simulation	662			O
645.782	Foundations of Digital and Mission Engineering	662		O	O
645.784	Decision Science and Analytics in Systems Engineering				O
Cybersecurity					
635.611	Principles of Network Engineering		See Cybersecurity Course Offering page for schedule		
635.673	Protecting Critical Infrastructure Against Cyber Attacks				
635.676	Cybersecurity in Information Systems				
635.682	Website Development				
635.683	E-Business: Models, Architecture, Technologies, and Infrastructure				
695.601	Foundations of Information Assurance				
695.744	Reverse Engineering and Vulnerability Analysis				
Project Management					
595.662	Technical Organization Management	667	See Engineering Management Course Offering page for schedule		
595.665	Strategic Communications in Technical Management	667			
595.676	Finance, Contracts, and Compliance for Technical Professionals	667			
595.727	Advanced Concepts in Agile Technical Management	667			

*See catalog of complete list and description of prerequisites

**Odd years only

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Course #	Course Name	Pre-Req*	Summer	Fall	Spring
Software Systems					
605.604	Object-Oriented Programming with C++	Knowledge of Java or C++	See Computer Science Course Offering page for schedule		
605.607	Agile Software Development Methods	662, 667			
605.608	Software Project Management	3-5 years technical work experience			
605.704	Object-Oriented Analysis and Design	Experience in OOP such as Java or C++			
605.705	Software Safety	662, 667			
605.708	Tools and Techniques of Software Project Management	3-5 years technical work experience			

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