



Master of Software Engineering (SWENG) Prescribed and Elective Courses

The Master of Software Engineering degree will be awarded upon successful completion of the 36-credit curriculum below, completion of [SARI](#), and, if required, added provisional classes. The courses are not listed in sequential order. **The Capstone Course, SWENG 894, is only offered during fall Semesters and 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 Core Curriculum			
Course #	Course Titles	Semester	Grade
SWENG 581	Software Testing		
SWENG 586	Requirements Engineering		
SWENG 587	Software Systems Architecture		
SWENG 837	Software System Design (Previously SWENG 537)		
SWENG 861	Software Construction		
SYSEN 505	Technical Project Management		
12-Credit Elective Curriculum			
Course #	Course Titles	Semester	Grade
6-Credit Required Capstone (to be taken near end of the program) *The Capstone Courses is only offered in Fall Semesters.			
SWENG 894	Advanced Software Engineering		
Provisional Online Courses If required, students are notified upon admission to the program			
SWENG 400	Introduction to Software Engineering Studio		
IST 140	Introduction to Application Development		
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.

Questions & Advising - Students should contact their assigned faculty advisors with any questions or for advice on course selection.

All course work toward the Master of Software Engineering degree must be completed within eight years of admission to the program.



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Program Electives

Course descriptions can be found at this [link](#).

Electives Courses (Choose four courses from the following)	
Course #	Course Title
CSE 543	Computer Security
DAAN 825	Large-Scale Database and Warehouse (Prerequisite: INSC 521)
DAAN 862	Analytics Programming in Python (Prerequisite: STAT 500)
DAAN 871	Data Visualization for Analytics
DAAN 881	Data-Driven Decision Making (Prerequisite: STAT 500)
DAAN 570	Deep Learning (Prerequisite: STAT 500)/(formerly DAAN 897)
DAAN 897	Enterprise Analytics Strategies
EA 871	Enterprise Architecture Fundamentals I
IE 575	Foundations of Predictive Analytics (Prerequisite: STAT 500)
INFSY 860	Data Communications, Systems, and Networks (Previously INFSY 560)
INFSY 863	Network Security (Previously INFSY 563)
INSC 521	Database Design Concepts
INSC 526	Business Process Management and Integration
INSC 561	Web Security and Privacy
INSC 846	Network & Predictive Analytics for Socio-Technical Systems
INSC 897	Ethical Hacking
IST 454	Computer and Cyber Forensics
IST 516	Web & Internet Information Retrieval
STAT 500	Applied Statistics
STS 589	Ethics and Values in Science and Technology
SWENG 541	Advanced Database Design (Prerequisite: INSC 521 or Division Approval)
SWENG 545	Data Mining
SWENG 569	Service-Oriented Architecture
SWENG 585	Pattern-Oriented Design
SWENG 588	Program Understanding
SWENG 597	Special Topics: Formal Methods
SWENG 826	Applied Human-Computer Interaction
SWENG 888	Mobile Computing and Applications
SYSEN 507	Systems Thinking
SYSEN 536	Decision and Risk Analysis in Engineering
SYSEN 850	Creativity and Problem Solving I (Previously SYSEN 550)
SYSEN 555	Invention and Creative Design (SYSEN 850 recommended prior to SYSEN 555)