



Master of Science in Data Analytics (MS in DAAN) Required and Elective Courses

The Master of Science in Data Analytics degree will be awarded upon successful completion of the 30-credit curriculum below, and completion of the [SARI](#) Requirement. The courses are not listed in sequential order. A minimum of two distinct semesters of DAAN 600 (3-credits each, totaling 6 credits) is required for thesis research.

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

Course #	Course Titles	Semester	Grade
15-Credit Required Curriculum			
STAT 500	Applied Statistics (<i>Should be one of first courses taken</i>)		
DAAN 501	Research Methodology and Problem Framing		
DAAN 545	Data Mining (<i>formerly SWENG 545</i>) (<i>INSC 521 is <u>NOT</u> a required prerequisite</i>)		
DAAN 871	Data Visualization		
IE 575	Foundations of Predictive Analytics (<i>Required Prerequisite: STAT 500</i>)		
9-Credit Elective Curriculum			
Required 6-Credit Thesis (Two distinct semesters of DAAN 600 @ 3-credits each, totaling 6 credits)			
DAAN 600	Thesis Research (<i>Required Prerequisite: DAAN 501</i>) <i>NOTE: To schedule, please contact EngHelp@psu.edu</i>		
Scholarship and Research Integrity (SARI) Requirement			
SARI (Scholarship and Research Integrity) Required Online Activity		Semester Completed	
Note: The SARI Module is only offered in Spring & Fall semesters.			

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 - General questions should be sent to EngHelp@psu.edu. Students should contact their assigned faculty advisor for advice on course selection.



Master of Science in Data Analytics (MS in DAAN) Program Electives

9 Credits of Electives (<i>Choose 3 courses from the following list</i>)	
A-I 570	Deep Learning (Required Prerequisite: STAT 500) (Recommended Prerequisite: DAAN 862)
A-I 572	Reinforcement Learning
A-I 574	Natural Language Processing (Required Prerequisites: STAT 500 and A-I 570 or DAAN 570)
A-I 801	Foundations of Artificial Intelligence (Required Prerequisite: STAT 500) (Recommended Prerequisite: DAAN 862)
A-I 804	Ethics of Artificial Intelligence
A-I 879	Machine Vision
DAAN 822	Data Collection and Cleaning (Required Prerequisite: STAT 500) (INSC 521 is <u>not</u> a required prerequisite)
DAAN 825	Large-Scale Database and Warehouse (INSC 521 is <u>NOT</u> a prerequisite.)
DAAN 826	Large-Scale Databases for Real-Time Analytics (Required Prerequisite: DAAN 825)
DAAN 846	Network and Predictive Analytics for Socio-Technical Systems
DAAN 862	Analytics Programming in Python (Recommended Prerequisite: STAT 500)
DAAN 881	Data-Driven Decision Making (Required Prerequisite: STAT 500)
DAAN 897	Enterprise Analytics Strategies
ENGMT 520	Systems Optimization (formerly SYSEN 530) (SYSEN 520 is <u>not</u> a required prerequisite)
INSC 521	Database Design Concepts
STS 589	Ethics and Values in Science and Technology
SWENG 541	Advanced Database Design Concepts (Required Prerequisite: INSC 521 or approval by Division)
SYSEN 536	Decision and Risk Analysis in Engineering
SWENG 805/ SYSEN 805	Software/Technical Project Management (formerly SWENG 505/SYSEN 505)

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 - General questions should be sent to EngHelp@psu.edu. Students should contact their assigned faculty advisor for advice on course selection.