

# MASTER OF SCIENCE: DATA SCIENCE AND ANALYTICS

## Student Learning Outcomes

Students graduating from this program will:

- develop solutions for advanced problems using appropriate skills and knowledge in data science;
- recognize and apply state of the art techniques and tools in the data science field;
- communicate effectively in both written and oral forms;
- recognize the need for and ability to engage in life-long learning;
- plan and conduct scholarly activities;
- work effectively in teams.

The following coursework is applicable to students that have completed a Bachelor's degree in Computer Science or Electrical Engineering. All other students may be subjected to additional prerequisite coursework prior to beginning the plan of study detailed below.

Code	Title	Credits
<b>Required Coursework</b>		
COMP-SCI 5540	Principles of Big Data Management	3
COMP-SCI 5541	Advanced Programming Languages (Data Science Lab (Needs to be proposed as new course number))	3
COMP-SCI 5542	Big Data Analytics and Applications	3
COMP-SCI 5565	Introduction to Statistical Learning	3
COMP-SCI 5567	Machine Learning for Data Scientists	3
<b>Program Electives</b>		<b>15</b>
COMP-SCI 5525	Cloud Computing	
COMP-SCI 5543	Real-time Big Data Analytics	
COMP-SCI 5551	Advanced Software Engineering	
COMP-SCI 5560	Knowledge Discovery and Management	
COMP-SCI 5568	Fundamentals of Probabilistic Graphical Models	
COMP-SCI 5597	Directed Readings	
CSEE 5590	Special Topics (Artificial Intelligence for Cybersecurity)	
CSEE 5590	Special Topics (Python/Deep Learning Programming)	
CSEE 5590	Special Topics (Big Data Programming)	
CSEE 5590	Special Topics (IOT/Robots Programming)	
E&C-ENGR 5582	Computer Vision	
ECON 5525	Econometric Methods	
ECON 5625	Colloquium In Econometrics	
MIS 5507	Business Analytics and Statistics	
MIS 5557	Data Management and Data Mining for Business Analytics	
MKT 5566	Customer Data Analytics	
STAT 5501	Statistical Design Of Experiments	
STAT 5561	Time Series Analysis	
Total Credits		30