

# DATA ANALYTICS - MASTER OF DATA ANALYTICS (ONLINE)

The curriculum for the degree program is composed of 30 graduate credits. It is divided into different categories. One course can be used to satisfy only one category.

Prefix	Title	Credits
<b>Foundation</b>		
CSCI 4520	Python Programming I	3
or CSCI 4525	Python Programming II	
A ST 511	Statistical Methods for Data Analytics <sup>can be replaced by (A ST 505 and A ST 507)</sup>	3
Select one of the following courses		3
CSCI 4530	R Programming I	
A ST 515	Statistical Analysis with R	
<b>Methodologies</b>		
CSCI 5415	Introduction to Data Mining	3
CSCI 5420	Applied Machine Learning I	3
or E E 565	Machine Learning I	
Select one of the following courses		3
CSCI 5140	Database Management Systems I	
BCIS 575	Database Management Systems	
ICT 458	Web Development and Database Applications	
<b>Advanced Topics and Applications</b>		
Choose nine credits from the following:		9
A ST 555	Applied Multivariate Analysis	
A ST 616	Computational Statistics	
ASTR 630	Statistical and Numerical Methods in Astrophysics	
ASTR 671	Solar Astrophysics	
BIOL 566	Advanced Bioinformatics and NCBI Database	
BCIS 566	Business Analytics II	
BCIS 585	Enterprise Resource Planning & Business Processes	
CSCI 4525	Python Programming II	
CSCI 4540	Computer Science I Transition	
CSCI 4550	Introduction to Data Structures Transition	
CSCI 5410	Computer Graphics I	
or ICT 460	Advanced Software Development Concepts	
CSCI 5310	Bioinformatics Programming	
CSCI 5305	Bioinformatics	
CSCI 5820	Database Management Systems II	
E E 540	Photovoltaic Devices and Systems	
E E 590	Selected Topics (Numerical Computational Methods for Smart Grid)	
E E 596	Digital Image Processing	
I E 545	Characterizing Time-Dependent Engineering Data	
or BCIS 561	Business Analytics I	
I E 515	Stochastic Processes Modeling	
or I E 522	Queuing Systems	
I E 567	Design and Implementation of Discrete-Event Simulation	
ENGL 543	Multimedia Theory and Production	
or COMM 5220	Communication Technologies	
MATH 5220	Fourier Series and Boundary Value Problems	

or STAT 5230	Elementary Stochastic Processes	
SOCI 5150	Seminar in Social Networks	
SOCI 5155	Seminar in Text Analysis for the Social Sciences	
SOCI 5160	Seminar in Data Visualization	
<b>Capstone Experience</b>		
Select one of the following courses <sup>can be replaced by a course from Advanced Topics and Applications</sup>		3
CSCI 5994	Master's Project	
CSCI 5991	Special Research Problems	
MATH 5999	Master's Thesis	
A ST 596	Independent Study	
A ST 598	Special Research Problems	
BCIS 598	Independent Study	
E E 598	Master's Technical Report	
I E 598	Special Research Programs	
SOCI 5991	Special Research Problems	
Internship		
<b>Total Credits</b>		<b>30</b>

## A Suggested Plan of Study

Additional classes may be needed based on placement test results and course prerequisites. Visit with an advisor for help with creating a customized plan.

### First Year

Fall	Credits	
A ST 511	Statistical Methods for Data Analytics	3
CSCI 4520	Python Programming I	3
CSCI 5415	Introduction to Data Mining	3
<b>Credits</b>		<b>9</b>

### Spring

CSCI 5420	Applied Machine Learning I	3
CSCI 4530	R Programming I	3
One Elective Course from the list of Advanced Topics and Applications courses		3
<b>Credits</b>		<b>9</b>

### Second Year

Fall	Credits	
Two Elective Courses from the list of Advanced Topics and Applications courses		6
CSCI 5140	Database Management Systems I	3
or ICT 458	or Web Development and Database Applications	
<b>Credits</b>		<b>9</b>

### Spring

Choose one from the capstone experience group <sup>or one from the Advanced Topics and Applications group</sup>		3
<b>Credits</b>		<b>3</b>
<b>Total Credits</b>		<b>30</b>