

# DATA SCIENCE

## Course Catalog

### CORE CLASSES

Number	Course Title	Credits
DASC 5300/CSE 5300	Foundation of Computing	3
DASC 5301/CSE 5332	Data Science	3
DASC 5302/IE 5317	Introduction to Probability and Statistics	3
DASC 5303/IE 5315	Data Science Project Management	3
Electives	Any specialization course or other graduate course outside of Computer Science. No more than 3 in one department.	15
DASC 5309	Data Science Capstone Project	3

**30  
HOURS  
TOTAL**

### ELECTIVE CLASSES

Number	Course Title	Credits
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#### COMPUTER SCIENCE

CSE 5330	Database Systems	3
CSE 5334	Data Mining	3
CSE 5335	Web Data Management	3
CSE 5360	Artificial Intelligence I	3
CSE 5367	Pattern Recognition	3
CSE 5368	Neural Networks	3
CSE 6332	Cloud Computing & Big Data	3
CSE 6363	Machine Learning	3
CSE 6367	Computer Vision	3

#### INDUSTRIAL ENGINEERING

IE 5301	Intro to Operations Research	3
IE 5303	Quality Systems	3
IE 5304	Advanced Engineering Economy	3
IE 5318	Applied Regression Analysis	3
IE 5322	Simulation and Optimization	3
IE 5323	Agent-Based Simulation	3
IE 5351	Intro to Systems Engineering	3
IE 6308	Design of Experiments	3
IE 6318	Data Mining and Analytics	3

#### MATERIAL SCIENCE AND ENGINEERING

MSE 5300	Intro to Materials Science & Engineering	3
MSE 5350	Intro to Computational Material Science	3

#### GEOLOGY

GEOL 5320	Understanding Geographic Info Systems	3
GEOL 5322	Global Positioning System	3
GEOL 5323	Remote Sensing Fundamentals	3

Number	Course Title	Credits
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#### ELECTRICAL ENGINEERING

EE 5304	Cyber-Physical Systems	3
EE 5322	Intelligent Control Systems	3
EE 5325	Robotics	3
EE 5350	Digital Signal Processing	3
EE 5352	Statistical Signal Processing	3
EE 5353	Neural Network and Deep Learning	3
EE 5354	Machine Learning	3
EE 5364	Information Theory for Data Science	3
EE 6353	Convex Optimization	3

#### MATHEMATICS

MATH 5314	Experimental Design	3
MATH 5353	Applied Linear Models	3
MATH 5358	Regression Analysis	3
MATH 6310	Foundation of Data Sciences	3
MATH 6311	Optimization of Big Data	3

#### BIOLOGY

BIOL 5340	Bioinformatics	3
BIOL 5361	Advanced Biometry	3
BIOL 5362	Experimental Design	3

#### PSYCHOLOGY

PSYC 5407	Experimental Design	3
PSYC 6349	Psychometric Theory	3
PSYC 6355	Multivariate Analysis	3

#### CAPSTONE PROJECT (PICK ONE)

DASC 5309	Capstone Project	3
DASC 5391	Internship	3