Program Overview

For the M.S. in Data Science degree, the table below lists the "**Required Courses**" under C.1, C.2, and C.3. a or b (at least 18 credit hours) and the "**Electives**" (at least 14 credit hours). In C.3, students are allowed to choose either a non-thesis (C.3.a) option or a thesis (C.3.b) option. Students will be admitted to only one of these tracks. Students must additionally complete an ethics course. The coursework consists of 32 semester hours. In planning one's program of study, one should be careful to note hidden pre-requisites.

	Course Prefixes & Numbers	**Course Titles**	**Credit Hours**	
	C.1. Core Courses			8
1	CSCI (STAT) 6375	Foundations of Data Science **(NEW)**	4	
2	CSCI 6360	Data Science II	4	
	C.2. Advanced Courses			6
3	STAT 6420 Or STAT 6530	Applied Linear Models or Statistical Inference for Data Scientists	3 3	
4	STAT 8330	Advanced Statistical Applications and Computing	3	
	C.3.a. Non-thesis option			4
	CSCI 7200 Or STAT 7000	Master's Project or Master's Research	4	
5	**C.3.b. Thesis option**			
	CSCI 7300 or STAT 7300	Master's Thesis or Master's Thesis	4	
	Electives (Two courses from each category)*			14*
6	Category A (see below)	CSCI Elective 1	4	
7		CSCI Elective 2	4	

8	Category B (see below)	STAT Elective 1	3	
9		STAT Elective 2	3	
		Total Credit Hours		**32**

*The **14 credit hours** of Electives mentioned in the table above will consist of **8 credit hours** from **Category A (Computer Science)** and **6 credit hours** from **Category B (Statistics)**

Category A:
CSCI 6150 (4 hours) - Numerical Simulations in Science and Engineering
CSCI 6170 (4 hours) - Introduction to Computational Investing
CSCI 6210 (4 hours) - Simulation and Modeling
CSCI 6370 (4 hours) - Database Management
CSCI 6380 (4 hours) - Data Mining
CSCI 6470 (4 hours) - Algorithms
CSCI 6780 (4 hours) - Distributed Computing Systems
CSCI 6795 (4 hours) - Cloud Computing
CSCI 6850 (4 hours) - Biomedical Image Analysis
CSCI 8360 (4 hours) - Data Science Practicum
CSCI 8370 (4 hours) - Advanced Database Systems
CSCI 8380 (4 hours) - Advanced Topics in Information Systems
CSCI 8535 (4 hours) - Multi Robot System
CSCI 8790 (4 hours) - Advanced Topics in Data Intensive Computing
CSCI 8820 (4 hours) - Computer Vision and Pattern Recognition
CSCI 8850 (4 hours) - Advanced Biomedical Image Analysis
CSCI 8920 (4 hours) - Decision Making Under Uncertainty
CSCI 8945 (4 hours) - Advanced Representation Learning
CSCI(ARTI) 8950 (4 hours) - Machine Learning
CSCI 8951 (4 hours) - Large-Scale Optimization for Machine Learning
CSCI 8955 (4 hours) - Advanced Data Analytics: Statistical Learning and Optimization.
CSCI 8960 (4 hours) - Privacy-Preserving Data Analysis

Category B:
STAT 6240 (3 hours) – Sampling and Survey Methods
STAT 6250 (3 hours) - Applied Multivariate Analysis and Statistical Learning
STAT 6280 (3 hours) - Applied Time Series Analysis
STAT 6350 (3 hours) - Applied Bayesian Statistics
STAT 6430 (3 hours) - Design and Analysis of Experiments
STAT 6510 (3 hours) - Mathematical Statistics I
STAT 6620 (3 hours) - Applied Categorical Data Analysis
STAT 6800 (3 hours) - Tools for Statistical Theory
STAT 8000 (3 hours) - Introductory Statistical Collaboration
STAT 8060 (3 hours) - Statistical Computing I
STAT 8070 (3 hours) - Statistical Computing II
STAT 8210 (3 hours) - Multivariate: Theory and Methods
STAT 8230 (3 hours) - Applied Nonlinear Regression
STAT 8260 (3 hours) - Theory of Linear Models
STAT 8270 (3 hours) - Spatial Statistics
STAT 8280 (3 hours) - Time Series Analysis
STAT 8290 (3 hours) - Advances in Experimental Designs
STAT 8620 (3 hours) - Categorical Data Analysis and Generalized Linear Models
STAT 8630 (3 hours) - Mixed-Effect Models and Longitudinal Data Analysis