

### **5-year BS/MS Degrees in Data Science Plan of Study**

#### **111 Credits + 30 Graduate Credits**

[9 credits are counted towards both programs. One graduate course is used in place of a free elective in the undergraduate program]

#### **Freshman Year (31 cr)**

First Semester			C	Second Semester			C
ENL 101	Critical Writing & Reading I	3		ENL 102	Critical Writing & Reading II	3	
CIS 180	Object-Oriented Programming I	4		CIS 181	Object-Oriented Programming II	4	
DSC 101	Introduction to Data Science (US 1E)	3			University Studies 3B	3	
					University Studies 4B	3	
MTH 153	Analytic Geometry & Calculus I	4		MTH 154	Analytic Geometry & Calculus II	4	
	Total	14			Total	17	

#### **Sophomore Year (31 cr)**

First Semester			C	Second Semester			C
MTH 181	Discrete Structures I	3		MTH 280	Introduction to Scientific Computation	3	
MTH 221	Linear Algebra	3		MTH 231	Elementary Statistics I: Exploratory Data Analysis	3	
DSC 201	Data Analysis & Visualization	4		CIS 280	Software Specification & Design	4	
	Laboratory Science I (US 2A)	4			Laboratory Science II	4	
	University Studies 3A	3					
	Total	17			Total	14	

#### **Junior Year (30 cr)**

First Semester			C	Second Semester			C
CIS 360	Algorithms and Data Structures	3		CIS 381	Social & Ethical Aspects of CS (US 2B)	3	
MTH 331	Probability	3		MTH 332	Mathematical Statistics	3	
DSC 301	Matrix Methods for Data Analysis	3			University Studies 4B	3	
ENL 266	Technical Communications	3			Science/Quantitative Elective (US 2A)	3	
	University Studies 4A	3			University Studies 4C		
	Total	15			Total	15	

#### **Senior Year (28 cr)**

First Semester			C	Second Semester			C
DSC 498	Data Science Senior Capstone I	2		DSC 499	Data Science Senior Capstone II	2	
DSC 520	Computational Methods	3		DSC 530	Data Visualization Workshop	3	
CIS 452	Database Design	3		CIS 490/DSC 522	Machine Learning/Mathematical Statistics	3	
DSC	DSC UG Technical Elective	3		DSC	DSC UG Technical Elective	3	
DSC	DSC UG Technical Elective	3		DSC	DSC UG Technical Elective	3	
	Total	14			Total	14	

#### **Graduate Program – MS in Data Science – Fifth Year (21 credits)**

First Semester			C	Second Semester			C
DSC 600	DSC Master's Project	3		DSC 690	Data Science Thesis	3	
DSC	DSC Grad. Tech. Elective	3		DSC	DSC Grad. Tech. Elective	3	
DSC	DSC Grad. Tech. Elective	3		DSC	DSC Grad. Tech. Elective	3	
DSC	DSC Grad. Tech. Elective	3					
	Total	12			Total	9	