

SCHOOL OF COMPUTING | UNDERGRADUATE DATA SCIENCE CORE REQUIREMENTS

Course availability is subject to change Updated: 4/08/2022

PRE-MAJOR STATUS				
INTRODUCTORY REQUIREMENTS				
<i>Choose one of the following sequences...</i>				
<u>Course #</u>	<u>Course Name</u>	<u>Credits</u>	<u>Semester</u>	<u>Required Co- or Pre-Requisites (C minimum grade needed)</u>
CS 1400	Introduction to Computer Programming	4	Fall/Spring	Co-requisite: MATH 1060 OR MATH 1080 OR HIGHER
CS 1410	Object-Oriented Programming	4	Fall/Spring	CS 1400 Co-requisite: MATH 1310 OR HIGHER
OR				
CS 1420	Accelerated Object-Oriented Programming	4	Fall/Spring	Co-requisite: MATH 1310 OR HIGHER

PRE-MAJOR REQUIREMENTS				
<u>Course #</u>	<u>Course Name</u>	<u>Credits</u>	<u>Semester</u>	<u>Required Co- or Pre-Requisites (C minimum grade needed)</u>
CS 2420	Introduction to Algorithms & Data Structures	4	Fall/Spring	CS 1410 OR CS 1420
DS 2500	Data Wrangling	4	Spring	CS 1410 OR CS 1420

PRE-MAJOR MATHEMATICS REQUIREMENTS				
<i>Choose one of the following sequences...</i>				
<u>Course #</u>	<u>Course Name</u>	<u>Credits</u>	<u>Semester</u>	<u>Required Co- or Pre-Requisites (C minimum grade needed)</u>
MATH 1310	Engineering Calculus I	4	Fall/Spring	<i>If you are not ready for calculus, please see your advisor</i>
MATH 1320	Engineering Calculus II	4	Fall/Spring/Summer	MATH 1310
OR				

MATH 1210	Calculus I	4	Fall/Spring	<i>If you are not ready for calculus, please see your advisor</i>
MATH 1220	Calculus II	4	Fall/Spring	MATH 1210
MATH 2210	Calculus III	3	Fall/Spring	MATH 1220

FULL MAJOR STATUS

Course #	Course Name	Credits	Semester	Required Co- or Pre-Requisites (C minimum grade needed)
CS 2100	Discrete Structures	3	Fall/Spring	(CS 1410 OR CS 1420) AND MATH 1310
CS 3500	Software Practice	4	Fall/Spring	CS 2420 AND Full Major Status
CS 4150	Algorithms	3	Fall/Spring	CS 2100, CS 3500, AND Full Major Status
DS 3190	Foundations of Data Analysis	3	Fall	CS 2100, CS 2420, MATH 2270, AND Full Major Status Co-Requisite: MATH 3070
DS 3390	Ethics in Data Science	3	Fall	Full Major Status
DS 4140	Data Mining	3	Spring	DS 3190 AND Full Major Status
DS 4350	Machine Learning	3	Fall/Spring	CS 3500 AND DS 3190
DS 4530	Database Systems	3	Spring	CS 3500 AND Full Major Status
DS 4630	Visualization for Data Science	3	Fall	CS 3500 AND Full Major Status
MATH 2270	Linear Algebra	4	Fall/Spring/Summer	MATH 1320 OR MATH 2210
MATH 3070	Applied Statistics I	4	Fall/Spring/Summer	MATH 1220 OR 1311 OR 1320 OR 1321 OR AP BC SCORE OF 4+
MATH 3080	Applied Statistics II	3	Spring	MATH 3070
WRTG 3014 OR WRTG 3015	Scientific Writing OR Professional Writing	3	Fall/Spring/Summer	WR2

SENIOR CAPSTONE*Choose one of the following sequences...*

Course #	Course Name	Credits	Semester	Required Co- or Pre-Requisites (C minimum grade needed)
DS 4800 **	Senior Capstone (Design)	3	Fall/Spring	Final academic year, Full Major Status, AND completion of at least two of the following: DS 4140, DS 4350, DS 4530, DS 4630
DS 4850 **	Senior Capstone Project	3	Fall/Spring	DS 4800 AND Full Major Status
<u>OR</u>				
DS 4940	Undergraduate Research	3	Fall/Spring	Final academic year, Full Major Status, AND completion of at least two of the following: DS 4140, DS 4350, DS 4530, DS 4630
DS 4970	Undergraduate Thesis	3	Fall/Spring	DS 4940 AND Full Major Status

** These courses **must** be taken as a sequence during your final two semesters in the program (e.g. Fall --> Spring **or** Spring --> Fall)