

**Bachelor of Science in Computer Science
(Data Science Concentration)
129 Credits**

Course Prefix	Course Title	Credits	Prerequisites
<i>*Remedial Courses</i>			
MATH003	Intermediate Algebra	**3	None
ENG050	Grammar and Composition	**3	None
<i>***Additional Math Courses</i>			
MATH116	Pre-Calculus	***4	Placement Test or MATH003
<i>First Year (Fall, Spring, and Summer)</i>			
CS100	Introduction to Scripting: Python for Programmers	3	None
CS115	Web Programming: HTML5, CSS and JavaScript	3	None
MATH143	Calculus 1	4	None
ENG100	English Composition	3	ENG050 or Placement Test
General Education Course	Please see General Education	3	As Required
CS110	C Programming	4	CS055 or Placement Test
MATH145	Calculus 2	4	MATH143
SCI145	College Physics 1	4	MATH143
ENG250	Speech and Oral Communication	3	ENG100
General Education Course	Please see General Education	3	As Required
<i>Second Year (Fall, Spring, and Summer)</i>			
CS285	C++ Programming: Object Oriented Programming	4	CS110 or CS100
MATH245	Calculus 3	3	MATH145
SCI245	College Physics 2	4	SCI145
ENG220	Technical and Professional Writing	3	ENG100
General Education Course	Please see General Education	3	As Required
CS212	Java Programming	4	CS102 or CS100 or CS110
CS221	Linux Programming Environment	3	CS110
MATH295	Discrete Mathematics	3	MATH145
General Education Course	Please see General Education	3	As Required
General Education Course	Please see General Education	3	As Required

* Remedial classes are required when a placement test is not passed.

** Remedial class credits are not counted towards earning a degree.

<i>Course Prefix</i>	<i>Course Title</i>	<i>Credits</i>	<i>Prerequisites</i>
Third Year (Fall, Spring, and Summer)			
CS190	Digital Systems	3	MATH143
CS295	Data Structures and Algorithms	4	CS110/212/285 and MATH145
CS341	Network Systems	3	CS110 and CS221
General Education Course	Please see General Education	3	As Required
General Education Course	Please see General Education	3	As Required
CS320	Operating Systems Concepts	3	CS221 and CS295
SWE360	Database Management Systems	4	CS285 and CS295
Elective	CS&E approved Elective Course	3	As Required
General Education Course	Please see General Education	3	As Required
General Education Course	Please see General Education	3	As Required
Fourth Year (Fall, Spring, and Summer)			
SWE351	Computer Architecture	3	CS110 and CS295
CS457	Machine Learning	3	CS295 and MATH240
CS459	Data Mining and Visualization	3	CS295 and MATH240
Elective	CS&E approved Elective course	3	As Required
CSE480	Senior Project 1: Planning	3	Senior Level
CS361	Introduction to Compilers	3	CS110 and CS295
SCI345	College Physics 3	3	SWE484
CS446	High Performance Computing	3	CS295 and MATH290
Elective	CS&E approved Elective course	3	As Required
CS485	Senior Project 2: Execution	3	CS484 (from last semester)