

COURSE SYLLABUS



Education That Works For a Lifetime

Course Title:	Programming in Data Science		Date submitted:	Spring 2021 (AAC: 21-17)	
Department:	STEAM				
Curriculum:	Math/Computer Science				
Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.	Course Code: (eg. ACC 101)	DTS*201	Prerequisites:		
	Course Type:	L/D	C- or better in Principles of Statistics (MAT*167)		
	A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: Internship M: Seminar P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/Clinical/Lab Z: Combined Lecture/Studio	Elective Type:	G/M		
	AH: Art History E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science	Credit Hours:	3	Corequisites:	
	Developmental: (yes/no)	No	None		
	Lecture:	3			
	Clinical:	0			
	Lab:	0			
	Studio:	0			
	Other:	0			
Contact Hours:	TOTAL:	3	Other Requirements:		
Class Maximum:	30	None			
Semesters Offered:	F/S/Su				
Catalog Course Description:	Introduction to the field of data science and the programming language. Explores the data science lifecycle, including question formulation, data collection and cleaning, exploratory data analysis and visualization, statistical inference and prediction, and decision-making. Focuses on quantitative critical thinking and key principles and techniques needed to carry out this cycle. No prior programming experience required.				
Topical Outline: List course content in outline format.	1. Intro to Data Science 2. Intro to Data Quest 3. Programming 4. Data Visualization 5. Data Cleaning 6. SQL Fundamentals 7. Creating a database 8. Statistics Fundamentals 9. Probability Fundamentals				
Outcomes: Describe measurable skills or knowledge that students should be able	Upon successful completion of this course, each student will be able to: 1. Explain the field of data science. 2. Apply techniques to import, clean, and transform data. 3. Practice exploratory analysis and visualization of data techniques.				

<p>to demonstrate as evidence that they have mastered the course content.</p>	<p>4. Analyze and interpret data to tell a story. 5. Utilize the programming language to manipulate data.</p> <p>PROGRAM: (Numbering reflects Program Outcomes as they appear in the college catalog)</p> <p>GENERAL EDUCATION: <i>(Numbering reflects General Education Outcomes as they appear in the college catalog)</i></p> <p>Quantitative Reasoning -Students will learn to recognize, understand, and use the quantitative elements they encounter in various aspects of their lives. Students will develop a habit of mind that uses quantitative skills to solve problems and make informed decisions.</p> <p>Demonstrates: Interprets numerical information and applies sufficient laws of logic and mathematics to solve problems using numbers, symbols, graphs and/or descriptions.</p> <p>Does Not Demonstrate: Misinterprets numerical information or insufficiently applies laws of logic and mathematics to solve problems using numbers, symbols, graphs and/or descriptions.</p>
<p>Evaluation: List how the above outcomes will be assessed.</p>	<p>Assessment will be based on the following criteria:</p> <ol style="list-style-type: none"> 1. Tests 2. Projects
<p>Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.</p>	<p>Required: Computer classroom Desired:</p>
<p>Textbook(s)</p>	<p>Refer to current academic year printout</p>