

COURSE SYLLABUS

Course Title:	Data Science in R		Date submitted:	Spring 2020
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 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	
	Contact Hours:	Lecture: 3 Clinical: 0 Lab: 0 Studio: 0 Other: 0 TOTAL: 3		
	Class Maximum:	30	Other Requirements:	
	Semesters Offered:	F/S/Su	None	
Catalog Course Description:	Introduction to the field of data science and the programming language of R. 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.	<ol style="list-style-type: none"> 1. Intro to Data Science 2. Intro to Data Quest 3. Programming in R 			

	<ol style="list-style-type: none"> 4. Data Visualization 5. Data Cleaning 6. SQL Fundamentals 7. Creating a database 8. Statistics Fundamentals in R 9. Probability Fundamentals in R
<p>Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.</p>	<p>Upon successful completion of this course, each student will be able to:</p> <ol style="list-style-type: none"> 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. 4. Analyze and interpret data to tell a story. 5. Utilize the programming language R to manipulate data.
	<p>PROGRAM: <i>(Numbering reflects Program Outcomes as they appear in the college catalog)</i> None</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 classrooms</p> <p>Desired:</p>
<p>Textbook(s)</p>	<p>Refer to current academic year printout</p>