

COURSE SYLLABUS



Education That Works For a Lifetime

Course Title:	Differential Equations	Date submitted:	Spring 2014 (AAC: 14-92)	
Department:	Mathematics & Science			
Curriculum:	Mathematics			
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) MAT*285 Course Type: L/D A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: M: Seminar Internship P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio	Prerequisites:		
	Credit Hours: 3 Developmental: (yes/no) No Lecture: 3 Clinical: 0 Lab: 0 Studio: 0 Other: 0 TOTAL: 3	C- or better in Calculus II: (MAT*256)		
	Contact Hours: Lecture: 3 Clinical: 0 Lab: 0 Studio: 0 Other: 0 TOTAL: 3	Corequisites:		
	Class Maximum: 30 Semesters Offered: F/Sp	None		
		Other Requirements:		
		None		
	Catalog Course Description:	Methods of solution of ordinary differential equations, including the LaPlace Transform, are covered. Some elementary applications in geometry, physics, and chemistry are included.		
	Topical Outline: List course content in outline format.	1. Families of curves and their differential equations 2. Solution of first order differential equations a. Separation of variables b. Homogeneous coefficient equations c. Exact equations d. Linear equations 3. Elementary applications in geometry (orthogonal trajectories), physics and chemistry 4. Integrating factors 5. Linear differential equations of the nth order a. Linear independence b. Differential operators c. Homogeneous with constant coefficients d. Nonhomogeneous: undetermined coefficients and variation of parameters method 6. Inverse differential operators 7. The LaPlace Transform and its inverse		

<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, the student will be able to do the following:</p> <p>COURSE:</p> <ol style="list-style-type: none"> 1. solve differential equations of various orders using appropriate methods 2. apply solutions, especially to the fields of geometry, physics, and chemistry
	<p>PROGRAM: Not Applicable</p>
	<p>GENERAL EDUCATION:</p> <p>7. 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> <p>Quizzes Exams Projects as assigned</p>
<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: None</p> <p>Desired: None</p>
<p>Textbook(s)</p>	<p>Refer to current academic year printout</p>