



Three Rivers Community College

Anthony Benoit/TV 205

MAT* K285 Differential Equations

(860) 885-2386

Spring 2008 (Th 6:00-8:45 pm)

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<http://environmentalet.org/mat285>

Course Description: This course provides an introduction to ordinary differential equations and their applications, linear differential equations, systems of first order linear equations and numerical methods.

Text: Kohler and Johnson, 2006, Elementary Differential Equations, 2nd Ed., Pearson/Addison-Wesley

Point Breakdown:	
Tests 1 and 2, 15 points each:	30 points
Midterm and Final, 25 points each:	50 points
Homework, Quizzes, Class participation*:	20 points
Total:	100 points

*Includes attendance, discussion, participation in special projects, tidbits of info (eg, news clippings) and courtesy toward your classmates & instructor.

Expect to spend three to nine hours per week doing homework for this class.

Tests will be take-home. Midterm and final will be in class. If tests are handed in late, they may be marked down or not marked. Homework will be assigned every week and may be collected. If homework is handed in late, it may get a zero grade. **If you miss a class, please make an effort to get the missed information from another student.** Note that everyone who does the homework, comes to class, pays attention and gets any needed extra help is likely to do well.

Important information about academic integrity: Everything you submit should be your own work and your own words. You should feel free to use information and ideas from any book, article, website, and so forth (and you may quote from these word for word if you must mark all quotations with quotation marks and clearly indicate the source of all words, ideas and information which are not your own). In some cases you will be permitted or even encouraged to work with other students or in groups. What you submit in those cases should acknowledge the contribution of others.

Tests and exams must be entirely your own work unless I explicitly tell you otherwise.

You will not be given credit for work that is not your own. In the case of willful or repeated violations, students may be subject to disciplinary action.

Note on disabilities: If you have a hidden or visible disability that requires classroom or test-taking modifications, the College will make reasonable accommodations. If you have not already done so, you may wish to see Chris Scarborough, Learning Specialist, in the Mohegan Library. His number is 892-5751. To receive accommodations, you must inform the College of your disability and provide documentation as necessary. Three Rivers and I are committed to helping all students succeed. Please feel free to discuss any aspect of this course with me.

Topics to be covered are shown on the next page.

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Note: Timing and topics are subject to change with notice. The later topics in particular may shift due to interest, ability, weather, or other factors. Exam dates may be adjusted if necessary.

Date	Subject	Reading	Event
24-Jan-08	Introduction, Terminology Initial Value Problems First Order Linear DE's Modeling: Mixing Problems	Chapter 1 Chapter 2, to page 41	
31-Jan-08	Growth & Decay First Order Nonlinear DE's Autonomous Equations Bernoulli Equations, Separable First Order Equations Exact Differential Equations	Chapter 2, to page 70	
7-Feb-08	The Logistic Model Applications to Mechanics Intro to Numerical Techniques, Euler's Method	Chapter 2, to end	Test 1 handed out
14-Feb-08	Second and Higher Order LDE's Constant Coefficient Homogeneous Equations Real Repeated Roots, Reduction of Order	Chapter 3, to page 132	Test 1 due
21-Feb-08	Complex Roots Unforced Mechanical Vibration Method of Undetermined Coefficients Method of Variation of Parameters	Chapter 3, to page 174	
28-Feb-08	Forced Mechanical Vibration Higher Order Linear Homogeneous DE's Higher Order Linear Nonhomogeneous DE's	Chapter 3, to end	
6-Mar-08	Review/Catch up		
13-Mar-08	*****Midterm*****		Midterm Exam
20-Mar-08	*****Spring Break*****		
27-Mar-08	First Order Linear Systems The Eigenvalue Problem Real Eigenvalues and the Phase Plane	Chapter 4, to page 246	
3-Apr-08	Complex/Repeated Eigenvalues Nonhomogeneous Linear Systems Numerical Solutions for Linear Systems Diagonalization	Chapter 4, to end	
10-Apr-08	Laplace Transforms Method of Partial Fractions Periodic Functions	Chapter 5, to page 359	
17-Apr-08	LP and Systems of DE's Convolution The Delta Function and Impulse Response	Chapter 5, to end	Test 2 handed out
24-Apr-08	Numerical Methods Euler's Method--Straight and Modified, Heun's Method Taylor Series Methods	Chapter 7	Test 2 due
1-May-08	Runge-Kutta Methods Power Series	Chapter 8	
8-May-08	Nonlinear Systems	Chapter 6	
15-May-08	*****Final*****		Final Exam