**Salt Lake Community College**

**DIFFERENTIAL EQUATIONS** **AND LINEAR ALGEBRA**

**MATH 2250**

# **Fall 2011**

**INSTRUCTOR:**

**OFFICE:**

**E-MAIL:**

**PHONE:**

**CONSULTATION:**

**WEB PAGE:**

**TEXT**: Differential Equations and Linear Algebra, 2nd Edition, by Jerry Farlow, James E. Hall, Jean Marie McDill, Beverly H. West; Prentice Hall publisher.

**PREREQUISITES:** Within the last year, you must have completed a second semester or third quarter Calculus course with a grade of C or better. Concurrent enrollment in Math 2210 and Math 2250 requires departmental approval.

**COURSE DESCRIPTION**: To develop foundations for a theoretical understanding and working knowledge of ordinary differential equations and linear algebra as they relate to modeling problems in science and engineering.

**COURSE OBJECTIVES**: We develop standard classical techniques of solving ordinary differential equations including first order equations, second and higher order linear equations, systems, and Laplace transforms. We also examine the qualitative nature of solutions and study numerical methods to obtain solutions. Applications include population models, motion and resonance, equilibrium solutions, and electric circuits. The linear algebra portion includes the study of systems which may have none, one, or infinitely many solutions; vectors, determinants, matrices, and eigenvalues as they relate to solving systems of linear equations and systems of differential equations.

**CLASS SCHEDULE**: Attached is a tentative schedule for the course. This schedule will be followed as closely as possible; however, some modifications may be necessary during the semester. Your instructor will announce all modifications in class.

**HOMEWORK**: Attached is a list of homework assignments. Homework will be collected on a weekly basis. A list of “Homework Requirements” is also provided, and must be followed in order to receive full credit for assignments. Homework problems are similar to the problems that will be on course examinations and the final exam. **Regular practice is essential for success in mathematics; you should be prepared to spend at least two hours studying outside of class for each hour** **of class time**. Brief written assignments, group exercises, and computer projects may be assigned throughout the course.

**COMPUTER LABS**: There will be several computer labs assigned. All relevant software is accessible in the Math Dept. Lab in SI 092 (and may be available in other labs as well).

**EXAMS**: There will be up to four exams and a final during the semester. **No exam scores will be dropped.** Exams will be taken during a scheduled class period. **NO** **MAKE-UP EXAMS** will be given without permission from the instructor **before** the missed exam. In case of a last minute emergency, every effort should be made to contact the instructor as soon as possible. Full credit will be awarded on exam problems only if your work can be readily followed and solutions are precise and clearly indicated.

**FINAL EXAMINATION**: The Finals schedule is found in the Fall 2011 Class Schedule. The location will be announced. **It is NOT an option for the students to not take this exam.** Students should make arrangements with employers now to be free at the appointed time. The final will be a comprehensive examination emphasizing topics listed under the course objectives. It is an SLCC Math Department policy that students attaining a score of less than 60% on the final shall receive a grade no higher than "D" for the course.

**CALCULATORS:** Graphing calculators are useful tools used to demonstrate concepts and facilitate problem solving. They are not a substitute for learning the fundamental concepts of this course. While some homework assignments and projects may require the use of a graphing calculator or a CAS, questions on in-class exams will test basic facts that must be memorized. Graphing calculators **are not** allowed for in-class exams. You may use a basic scientific calculator. Also, **a cell phone may not be used as a calculator on any in class exam or quiz.**

**PERMANENT FOLDER**: To minimize the possibility of human or computer error, it is recommended that students keep all homework, labs, and exams in a folder until they have received a grade for the course.

**GRADING**: Grades will be awarded as follows:

A 100 - 93% of possible points C 76 - 73%

A‑ 92 - 90% C- 72 - 70%

B+ 89 - 87% D+ 69 - 67%

B 86 - 83% D 66 - 63%

B‑ 82 - 80% D- 62 - 60%

C+ 79 - 77% E below 60%

**Grade weights** Homework 15%

Computer labs 10%

Exams 50 %

Final Exam 25%

**WITHDRAWAL POLICY:** Students may drop from the course through September 14. Students may withdraw from the course through October 28. **No withdrawals will be approved after that date.**

**CLASSROOM DEPORTMENT**: **Each student is responsible for her/his own behavior. Any student who shows a pattern of disrespect for others, or who at any time displays flagrant disrespect for others, will be subject to penalties as per the student code of conduct.**

**ATTENDANCE**: **Class attendance is STRONGLY advised**. Regular attendance is essential to achieve satisfactory results. It is the student's responsibility to be aware of all material covered, tests dates, and assignment due dates. Your instructor will outline specific attendance policies.

**CHEATING POLICY**: Students found cheating on tests will receive an “E” for the entire course.**There will be no tolerance for cheating.**

**ACCOMMODATIONS**: Students with disabilities needing accommodations such as: accommodated testing, interpreting, note‑taking, taped textbooks, assistive technology, equipment, accessibility arrangements, etc., must contact their instructor and/or the Disability Resource Center (Redwood Student Center Room 244 or South City Campus Room W138), 957-4659 (voice), 957-4646 (TTY), 957-4947 (FAX).

**EXTRA HELP**: Please use your instructor’s office hours to ask any questions - you can either phone or visit in person. You are also encouraged to send any questions via e-mail. Tutoring is available in the Math Lab (phone 957-4839) at Redwood SI092 or at the SCC Learning Center, N308. Finally, use each other as a resource! Study groups are invaluable and the Math Lab or Learning Center provides a convenient gathering place. A list of private tutors who may be hired is available in the Learning Centers.

**STUDENT LEARNING OUTCOMES:** SLCC is committed to fostering and assessing the following student learning outcomes in its programs and courses:  
  
\* Acquiring substantive knowledge in the field of their choice  
\* Developing quantitative literacies  
\* Developing the knowledge and skills to be civically engaged  
\* Thinking critically  
\* Communicating effectively

Finally, read and be aware of the regulations set forth in the Fall 2011 Schedule and the SLCC college catalog. Please see your instructor ASAP about any problems that are affecting your work in this class.