Section: 19756  
Time: MW 1730-1920  
Room: MH 491  

**Instructor Information:**  
name: Randy Scott  
office: MH-65  
office phone: 714-278-7639 (use email)  
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office hours: M 1930-2030

**Prerequisite:** Math 150A

**Required Materials & Equipment:** At each class meeting you should have (i) pencil (ii) paper (iii) calculator (graphing preferred) and (iv) textbook.

**Evaluation:**

**Exams:** We will have three midterm examinations: Sept. 24, Oct. 22, and Nov. 19, 2014. Makeup exams are given for only the most dire, well-documented, situations.

**Final Exam:** A comprehensive final exam will be given on December 15, 2014, during 1700-1850. Attendance at the final exam is mandatory; there will be no makeup final exams given.

**Quizzes:** Unannounced and based on the homework; given about once per week. There are NO make up quizzes for any reason. I will drop your lowest quiz score at the end of the semester.

**Homework:** Collected on a random basis, with a one class-period notice. NO late homework collected for any reason.

**Attendance:** Timely, consistent attendance is required.

**Extra Credit:** None. Ever. Don’t ask.

**Grade Computation and Standards:**

Your letter grade is assigned using the following scheme. Let $p =$ your total percentage and $l =$ your letter grade.

\[
\begin{align*}
& \text{If } p \geq 99\%, \text{ then } l = A+ \\
& \text{If } 99\% > p \geq 92\%, \text{ then } l = A \\
& \text{If } 92\% > p \geq 90\%, \text{ then } l = A- \\
& \text{If } 90\% > p \geq 88\%, \text{ then } l = B+ \\
& \text{If } 88\% > p \geq 82\%, \text{ then } l = B \\
& \text{If } 82\% > p \geq 80\%, \text{ then } l = B- \\
& \text{If } 80\% > p \geq 78\%, \text{ then } l = C+ \\
& \text{If } 78\% > p \geq 70\%, \text{ then } l = C \\
& \text{If } 70\% > p \geq 60\%, \text{ then } l = D \\
& \text{If } 60\% > p, \text{ then } l = F
\end{align*}
\]

**Classroom Management:** You paid a lot of money to take this class, and I expect you to behave as such:

- Attend class each and every day.
- Our class begins at 1730 and ends at 1920. I expect you to be on time and to stay for the entire class.
- On occasion, we will use our smart phone for classwork; other than these teacher-directed times, please do NOT have your cell phone out for any reason during class. (If you have an emergency that requires you to be in contact with the outside world, please notify me before class begins.)
- Please attend to any biological needs BEFORE 1730.
- Please sit at the front of the classroom. I promise to maintain appropriate dental hygiene.

All of these expectations are intended to make you more successful in the class.

**Important Dates:** Sept. 9, 2014 is the last day to drop the class with no record of participation. Oct. 3, 2014 is the last day to drop the class with an easy W. After this date, dropping with a W requires unambiguous evidence and signatures of the professor, department chair, and dean of the division. Nov. 14, 2014 is the last day to drop with a W.
General Education Requirements: Math 150B does not meet any specific general education requirements. (You would have already met the mathematics requirement in a prerequisite course.) However, Math 150B will satisfy the following general education learning goals:

1. To understand and appreciate the varied ways in which mathematics is used in problem-solving.
2. To understand and appreciate the varied applications of mathematics to real world problems.
3. To perform appropriate numerical calculations, with knowledge of the underlying mathematics, and draw conclusions from the results.
4. To demonstrate knowledge of fundamental mathematical concepts, symbols, and principles.
5. To solve problems which require mathematical analysis and quantitative reasoning.
6. To summarize and present mathematical information with graphs and other forms which enhance comprehension.
7. To utilize inductive and deductive mathematical reasoning skills in finding solutions, and be able to explain how these skills were used.
8. To explain the overall process and the particular steps by which a mathematical problem is solved.
9. To demonstrate a sense of mastery and confidence in the ability to solve problems which require mathematical concepts and quantitative reasoning.

Course Objectives & Learning Goals:

1. To understand and successfully use the integration techniques of integration by parts, trigonometric substitution, and partial fraction decomposition, and to learn the strategies for identifying which technique may best work in helping to evaluate a given integral.
2. To understand, and to be able to use, the Trapezoid, Midpoint, and Simpson’s Rules to approximate definite integrals (along with error bounds).
3. To correctly identify when a definite integral is improper, and to be able to determine if it converges or diverges by either direct calculation or by using the Comparison Test.
4. To learn how to apply the definite integral and integration techniques to the problems of finding the arc length of a curve, the area of a surface of revolution, moments and centroids, and hydrostatic pressure and force.
5. To understand the concept of a differential equation, and to be able to determine if a given function is a particular solution to a DE.
6. To understand the concept of slope field, to correctly graph simple slope fields, to be able to sketch an approximate graph of the solution to an initial value problem in a field, and to correctly identify any equilibrium solutions.
7. To be able to use Euler’s Method to construct the graph of an approximate solution to an initial value problem.
8. To correctly identify when a DE is separable and to be able to set up and solve separable DEs for a variety of applications (such as population growth and mixture problems).
9. To understand the concept of parametric equations, to be able to graph parametric curves (including the direction of motion on the curve), and to learn how to eliminate the parameter (when possible) to find an equation in x and y for the curve.
10. To understand and successfully apply calculus to parametric curves to find derivatives, areas and arc lengths.
11. To study the polar coordinate system, to learn how to graph polar curves, and to apply calculus to polar curves to find derivatives, areas, and arc length.
12. To understand the concepts of a sequence and the limit of a sequence, and to be able to calculate the limit of a sequence by using a continuous function.
13. To grasp the concept of an infinite series (and to understand that its sum is the limit of the sequence of its partial sums), and to study geometric series and the conditions for its convergence and divergence.
14. To learn and effectively apply series tests such as the Integral Test, p-series test, the Comparison Tests, Alternating Series Test, and the Ratio Test, and to learn how to identify which test(s) may work best in determining if a series converges or diverges.
15. To comprehend the theory of Power Series, including radius of convergence and interval of convergence, and to be able to develop new Power Series from known series.
16. To understand the theory behind Taylor Series, to be able to find Taylor Series by using the definition, and to be able to find Taylor Series using known series.

These goals are achieved through the course work, including homework, classroom activities, quizzes, exams, and projects, which require the students to demonstrate understanding of the mathematical concepts presented in the course and to apply these concepts to the solutions of real-world applications.

Academic Integrity: Cheating obtaining or attempting to obtain credit for work by the use of any dishonest, deceptive, fraudulent, or unauthorized means. Helping someone commit an act of academic dishonesty. (UPS 300.021). Examples include, but are not limited to:

1. Unacceptable examination behavior communicating with fellow students, copying material from another students exam or allowing another student to copy from an exam, possessing or using unauthorized materials, or any behavior that defeats the intent of an exam.
2. Plagiarism taking the work of another and offering it as ones own without giving credit to that source, whether that material is paraphrased or copied in verbatim or near-verbatim form.
3. Unauthorized collaboration on a project, homework or other assignment where an instructor expressly forbids such collaboration.
4. Documentary falsification including forgery, altering of campus documents or records, tampering with grading procedures, fabricating lab assignments, or altering medical excuses.

Students who violate university standards of academic integrity are subject to disciplinary sanctions, including failure in the course and suspension from the university. Since dishonesty in any form harms the individual, other students and the university, policies on academic integrity are strictly enforced. I expect that you will familiarize yourself with the academic integrity guidelines found in the current student handbook.

Emergency Information: In the event of an emergency such as earthquake or fire:

- Take all your personal belongings and leave the classroom (or lab). Use the stairways located at the east, west, or center of the building.
- Do not use the elevator. They may not be working once the alarm sounds.
- Go to the lawn area towards Nutwood Avenue. Stay with class members for further instruction.
- For additional information on exits, fire alarms and telephones, Building Evacuation Maps are located near each elevator.

Anyone who may have difficulty evacuating the building, please see the instructor.

Student Disabilities: On the CSUF campus, the Office of Disabled Student Services (DSS) has been delegated the authority to certify disabilities and to prescribe specific accommodations for students with documented disabilities. DSS provides support services for students with mobility limitations, learning disabilities, hearing or visual impairments, and other disabilities. Counselors are available to help students plan a CSUF experience to meet their individual needs. If you require accommodations in this course for documented special needs, contact the Disabled Student Services office, UH 101, (714) 278-3117.