

Math 241  
Problem Solving in Calculus  
Syllabus, Winter, 2010

Class meets Tuesday and Thursday 10–11:50 a.m., JB390

**Instructor:** Dr. Charles Stanton  
**Office:** Jack Brown Hall 331  
**Telephone:** (909) 537–5376  
**email:** [stanton@math.csusb.edu](mailto:stanton@math.csusb.edu)  
**URL:** <http://www.math.csusb.edu/faculty/stanton/>  
**Office hours:** Tuesday and Thursday, 9–10 a.m.  
Monday and Wednesday, 12–1 p.m.  
and by appointment  
**Textbooks:** Math 241 Lab Manual *Handout*  
**Supplement:** Any calculus textbook

**Course Content:** The goal of the course is to show how technology may be used to your advantage in math courses. The course prerequisites are differential and integral calculus of one variable. We shall solve problems in calculus with the aid of computer software. The software we shall use in this course is Maple. Maple is a computer algebra system which is capable of performing mathematical processes in a wide variety of areas such as precalculus, calculus, multivariable calculus, linear algebra, combinatorics, differential equations, number theory, numerical analysis, statistics etc. Maple is an interactive system and there is little programming to be done. It must be stressed that this is not a course on Maple but rather how technology may help in mathematics. There are a wide variety of devices and computer software available, each with their advantages and disadvantages (for example, graphing calculators, Mathematica, Matlab, Sage, Scipy, etc).

**Assignments:** In the laboratory you will be asked to solve problems arising in calculus or some other branch of mathematics. In the seminar we shall briefly describe the mathematics behind the problem and suggest the Maple commands that might prove useful in deriving a solution. You will be expected to write up a solution to the problem and to describe how Maple was used in the process. Your report should not just contain “one line answers” but should describe and record the complete process. Your goal is to integrate the problem, discussion of the solution and how Maple was used to aid a solution in the report. A stranger reading your report should be able to reproduce the experiment and solve the problem from your work.

Each lab write-up should include an introduction to the problem, a procedure section which explains in detail what was done, and a conclusion. You may help each other during the class, but the lab write-up **must be your own**.

**Furlough Assignment** Tuesday, March 2, is a State Budget Closure day, so there will be no class. Students will be expected to work on that week’s laboratory independently.

**Grading:** Your grade will be based 70% on your written lab reports and 30% on the final exam and project.

**Grading Scale:**

A	92-100	C+	71-73
A-	89-91	C	62-70
B+	86-88	C-	60-61
B	78-85	D	50-59
B-	74-77	F	0-49

**University Policies:** Students should consult “Academic Regulations and Procedures” in the CSUSB Bulletin of Courses for the universitys policies on course withdrawal, cheating, and plagiarism

**Final Exam:** Thursday, March 25, 10 a.m.

**State Budget Closure Days and Furlough Days:** Friday February 12 and Tuesday March 2 the campus will be closed. In addition, Dr. Stanton will be on furlough Fridays January 8, Friday, January 29, and February 26.

**Students with Disabilities:** If you are in need of an accommodation for a disability in order to participate in this class, please let me know ASAP and also contact Services to Students with Disabilities at UH-183, (909)537-5238