Math 252-001 Calculus II  
Spring 2011

Location: NH 375, MWF 7:45-8:50pm  
Instructor: Steve Strand  
Email: sstrand@pdx.edu  
Website: web.pdx.edu/~sstrand

Office: NH-M430  
Office Hrs: MW 11am-12pm, and by appointment

Course Prerequisites: Solid algebra skills/understanding. Grades of C- or better in Math 251.


Objectives: If you do your job and I do mine, through the quarter you will:
- Understand some of the applications of integration, including areas, volumes, work, arc length, lateral surface area, and center of mass.
- Know how to integrate combinations of elementary functions with accuracy and confidence.

Quizzes will be given every Wednesday at the beginning of class and will be open HW. The quizzes are as much to show YOU how you are doing as they are for me. Your lowest quiz will be dropped.

Homework will be posted on my website on a weekly basis and due every Wednesday with the quiz. Late assignments will not be accepted. All assignments should be turned in with the cover page affixed. Grading will be solely based on completeness.

Exams will be given twice during the term and will be comprehensive up to that point.
   - Exam 1 - Wednesday, Apr 20–
   - Exam 2 - Wednesday, May 18–
These dates are subject to change, but I will notify you in advance. If for any reason you will not be in class on a test day, you must arrange a different date with me at least two weeks in advance. Make-ups will not be given after the test date has passed. Curving of scores will be at my discretion.

Final Exam –Monday, June 6, 8-9:50am–
It will be comprehensive over the quarter and you must pass the final to pass the class. I cannot change the date or time and exceptions to this schedule will be made only under extreme circumstances.

Grading: The quarter breakdown will be as follows:

   Assignments - 5%
   Quizzes - 25%
   Exams - 40%
   Final Exam - 30%

You may come by my office any time (that I am there) to see up-to-date grades.

Technology: You will need a graphing calculator for some portions of the class. TI-83+ is a good one, as is Casio FX-9750GAPLUS. You will need access to the internet regularly, as class materials are largely distributed through my website.

Accommodations: If you feel that your opportunities to be successful in this class are affected by a disability, please contact Disability Services at 503.725.4150, SMSU-116. They will determine how the course is to be adjusted for your individual needs.
Topics Covered:

CHAPTER 5 - THE INTEGRAL
5.1 Approximating and Computing Area
5.2 The Definite Integral
5.3 The Fundamental Theorem of Calculus, Part I
5.4 The Fundamental Theorem of Calculus, Part II
5.5 Net or Total Change as the Integral of a Rate
5.6 Substitution Method
5.7 Further Transcendental Functions
5.8 Exponential Growth and Decay *

TECHNIQUES OF INTEGRATION
7.2 Integration by Parts
7.3 Trigonometric Integrals
7.4 Trigonometric Substitution *
7.5 Integrals of Hyperbolic and Inverse Hyperbolic Functions *
7.6 The Method of Partial Fractions
7.7 Improper Integrals

CHAPTER 6 - APPLICATIONS OF THE INTEGRAL
6.1 Area Between Two Curves
6.2 Setting Up Integrals: Volume, Density, Average Value
6.3 Volumes of Revolution
6.4 The Method of Cylindrical Shells
6.5 Work and Energy *
6.8 Fluid Pressure and Force *
6.3 Center of Mass

CHAPTER 7 - NUMERICAL INTEGRATION
7.1 Numerical Integration

CHAPTER 8 - FURTHER APPLICATION OF THE INTEGRAL
8.1 Arc Length and Surface Area
8.4 Taylor Polynomials

* Time permitting