

MATH 1220, CALCULUS II

SPRING 2011 SYLLABUS, SECTION 2

1:00-1:50 MTWRF IN SC 227

Instructor: Dr. Jim Brandt

Office: ELC 403

Office hours: MWF 2:00 to 3:00, TR 11:00 to 12:00, and by appointment

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Course description: A continuation of Math 1210. Inverse trigonometric functions; techniques of integration; further applications of the definite integral; improper integrals and indeterminate forms; infinite series; conic sections and topics in analytic geometry; polar coordinates and parametric equations. A graphing calculator is required.

Prerequisite: A grade of C or better in Math 1210 or high school A.P. Calculus.

Content: This course is intended to deepen your understanding of the integration process and its relation to infinite sums. In working towards this goal, we will explore a variety of mathematical topics:

- applications and techniques of integration
- modeling with differential equations
- convergence of infinite sums
- polar and parametric curves

Textbook: Calculus: Early Transcendentals by Howard Anton, Irl Bivens, and Stephen Davis, 8th edition.

Calculator: A graphing calculator is required. A TI-83/84 or TI-89 is recommended. Calculators will not be allowed on exams.

Grading: Four exams will be given during the semester, and each will account for 15% of your grade. The final exam will account for another 20%. Approximately ten problem sets will be distributed and collected during the semester, and the total score on the problem sets will contribute the remaining 20% of your grade. Textbook exercises will be assigned daily, but will not be collected or graded. However, they will be discussed daily and it is essential to keep up with this work. A student's letter grade will be based on the following:

| | | | | | |
|----|----------|----|---------|----|---------|
| A | 93 - 100 | A- | 90 - 92 | | |
| B+ | 87 - 89 | B | 83 - 86 | B- | 80 - 82 |
| C+ | 77 - 79 | C | 73 - 76 | C- | 70 - 72 |
| D+ | 67 - 69 | D | 63 - 66 | D- | 60 - 62 |
| F | Below 60 | | | | |

Suggestions: Learning mathematics requires time, patience, and effort. Keeping up with assigned textbook exercises will spread out your time, patience, and effort, and will allow you to have a successful learning experience. If you are having difficulties, please come and talk to me, form a study group, or take advantage of the free tutoring at the Academic and Career Advising Center (<http://www.suu.edu/ss/acdc/tutoring.html>).

Disclaimer: Information contained in this syllabus, other than the grading, late assignments, makeup work, and attendance policies, may be subject to change with advance notice, as deemed appropriate by the instructor. Changes will be announced in class.

Policies:

Attendance Attendance is expected and is crucial to understanding the material. However, there is no separate score for attendance. Help sessions on *most* Thursdays are optional.

Assignments Make-up exams will be given only with a valid excuse, and this possibility should be discussed with me prior to the exam except in extreme circumstances. A maximum of two problems sets will be accepted late (within two weekdays of the due date).

Academic conduct Scholastic dishonesty will not be tolerated and will be prosecuted to the fullest extent. You are expected to have read and understood the current issue of the student handbook (published by Student Services) regarding student responsibilities and rights, and the intellectual property policy, for information about procedures and about what constitutes acceptable on-campus behavior. Regarding use of the campus network, the sharing of copyrighted material through peer-to-peer file sharing, except as provided under U.S. copyright law, is prohibited by law.

Disability support Students with medical, psychological, learning or other disabilities desiring academic adjustments, accommodations or auxiliary aids will need to contact the Southern Utah University Coordinator of Services for Students with Disabilities (SSD), in Room 206F of the Sharwan Smith Center or phone (435) 865-8022. SSD determines eligibility for and authorizes the provision of services.

Campus emergency In case of emergency, the University's Emergency Notification System (ENS) will be activated. Students are encouraged to maintain updated contact information through the *mySUU* portal, and to familiarize themselves with the Emergency Response Protocols posted in each classroom.

TENTATIVE SCHEDULE:

| Week | Topics | Notes |
|-------------|---|--|
| Jan 10 | Integration & area (chpts 6 & 7) | |
| Jan 17 | Volume (chpt 7) | 1/17 - Martin Luther King Day |
| Jan 24 | Length, surfaces & work (chpt 7) | |
| Jan 31 | Force & applications (chpt 7) | 2/4 - Exam 1 |
| Feb 7 | Integration by parts (chpt 8) | |
| Feb 14 | Trig substitutions & partial fractions (chpt 8) | |
| Feb 21 | Numerical integration (chpt 8) | 2/21 - President's Day |
| Feb 28 | Improper integrals (chpt 8) | 3/4 - Exam 2 |
| Mar 7 | Differential equations (chpt 9) | |
| Mar 14 | | Spring Break |
| Mar 21 | Infinite sequences & series (chpt 10) | |
| Mar 28 | Convergence tests (chpt 10) | 4/1 - Exam 3 |
| Apr 4 | Power series (chpt 10) | |
| Apr 11 | Polar & parametric curves (chpt 11) | |
| Apr 18 | Calculus in polar coordinates (chpt 11) | 4/21 - Exam 4, 4/22 - Good Friday |
| Apr 25 | Conics (chpt 11) | 4/29 - Study Day |
| May 2 | | Wed 5/4 - Final Exam 1:00 to 2:50 |

But just as much as it is easy to find the differential of a given quantity, so it is difficult to find the integral of a given differential. Johann Bernoulli

Our minds are finite, and yet even in these circumstances of finitude we are surrounded by possibilities that are infinite. Alfred North Whitehead