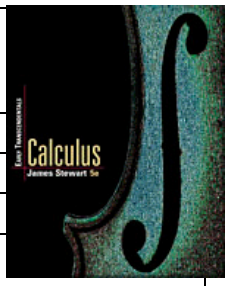
Syllabus for: (name of class)

Math 50B-E1908 (031908) *Calculus II: Integral Calculus*



Semester & Year:	Fall 2012
Course ID and Section Number:	Math 50B-E1908 (031908)
Number of Credits/Units:	4 units
Day/Time: **Location:**	MWF 11:40am-12:55pm, Eureka Campus, PS Room 120
Instructor's Name:	Teresa ("Tami") Matsumoto
Contact Information:	Office location and hours: PS 102 Phone: (707)476-4543 Email: tami-matsumoto@redwoods.edu

Course Description (catalog description as described in course outline):

MATH-50B Integral Calculus - (4 units lecture) The second in the series of three calculus courses. Integral Calculus develops a set of advanced symbolic and numerical integration techniques, building on skills developed in the first course in the series, Differential Calculus. The course includes applications of integration, sequences and series, and the use of the Taylor polynomial to approximate functions. Students are introduced to parametric and polar equations and to the solution of differential equations. Grade Only. CSU and UC. *Prerequisite: MATH-50A*

Student Learning Outcomes (as described in course outline) :

What should the student be able to do as a result of taking this course?

Some objectives in terms of specific, measurable student accomplishments are:

1. Read, write, and speak accurately about mathematical ideas and use correct mathematical notation.
2. Use graphing technology to visualize functions, explore mathematical concepts, and verify their work.
3. Apply differentiation and integration techniques and theory to functions of one variable.
4. Apply the concepts of the derivative and integral to solve real-world problems and applications.
5. Demonstrate the fundamental relationship between the derivative and the integral.
6. Apply the theory of infinite series and Taylor polynomials to approximate functions of one variable.
7. Use numerical, graphical, symbolic, and verbal representations to solve problems and communicate with others.

Refer to http://msenux.redwoods.edu/mathdept/outlines/current/math50b.php

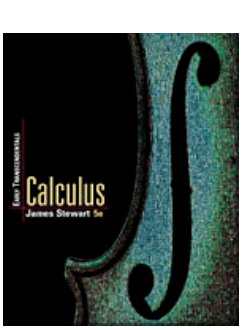
Special accommodations: College of the Redwoods complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request at least one week before the first test so that necessary arrangements can be made. No last-minute arrangements or post-test adjustments will be made. If you have a disability or believe you might benefit from disability related services and may need accommodations, please see me or contact Disabled Students Programs and Services. Students may make requests for alternative media by contacting DSPS.

Academic Misconduct: Cheating, plagiarism, collusion, abuse of resource materials, computer misuse, fabrication or falsification, multiple submissions, complicity in academic misconduct, and/ or bearing false witness will not be tolerated. Violations will be dealt with according to the procedures and sanctions proscribed by the College of the Redwoods. Students caught plagiarizing or cheating on exams will receive an "F" in the course.

The student code of conduct is available on the College of the Redwoods website at: http://www.redwoods.edu/District/Board/New/Chapter5/Ap5500.pdf

College of the Redwoods is committed to equal opportunity in employment, admission to the college, and in the conduct of all of its programs and activities.

College of the Redwoods ~ Fall 2012
Math 50B-E1908 (031908) Calc II: "Integral Calculus" (4 units)
8/27/2012 – 12/14/2012
MWF 11:40am-12:55pm ~ Eureka Campus, PS Room 120



Instructor: Teresa ("Tami") Matsumoto

Contact information:

Office: **PS 102**
Office Phone: **476-4543**
email: tami-matsumoto@redwoods.edu [Put "**Math 50B**" in Subject line of email messages along with a useful word or phrase]
Mailbox: You can drop off papers by sliding them under my office door (PS 102), or deliver them to the Division office in PS 101. Make sure they are clearly marked with my name on it (and yours, too).
Phone number for cancelled class announcements: 476-4210 #5 (This is only for Math & Science classes in Eureka)

Office Hours: Generally **MW 3-3:45pm**. Additional time is also be available by appointment. About one Wednesday a month, I will be unable to have my Office Hour due to committee meetings.

Course Description: (from catalog)

MATH-50B Integral Calculus - (4 units lecture) The second in the series of three calculus courses. Integral Calculus develops a set of advanced symbolic and numerical integration techniques, building on skills developed in the first course in the series, Differential Calculus. The course includes applications of integration, sequences and series, and the use of the Taylor polynomial to approximate functions. Students are introduced to parametric and polar equations and to the solution of differential equations. Grade Only. CSU and UC. *Prerequisite: MATH-50A*

Recommendation: Sign up for The Math Lab (**Math 52**) for free drop-in tutoring throughout the semester. Register for either the 0.5 unit or the 1.0 unit section. You can attend any time during Math Lab Open Hours: M-Th 9:30-5:00 and Fri 9:30-2:30

Note There is also ***FREE online tutoring*** available online 24 hours a day, 7 days a week. You get to it through the "myCR" course management system.

Math 50B Course Learning Outcomes:
What should the student be able to do as a result of taking this course?
Some objectives in terms of specific, measurable student accomplishments are:

1. Read, write, and speak accurately about mathematical ideas and use correct mathematical notation.
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Refer to http://msenux.redwoods.edu/mathdept/outlines/current/math50b.php

Materials you will need:

- **Required Text**: ***Calculus - Early Transcendentals***, 5th Edition, by James Stewart - McMaster University, ISBN #0534393217 (with Tools for Enriching Calculus Video CD-ROM and BCA Tutorial). 2003. Brooks/Cole, a division of Thomson Learning, Inc. The text is available in the CR Library and may be checked out for the entire semester. You can also buy your own copy online very inexpensively.

- **Graphing Calculator**: A Graphing Calculator, such as a TI-83 Plus, TI-84, or TI-89. A limited number are available **for rent** – from the Division office PS101.

- **Supplemental Handouts**. I will provide lots of handouts some of which you will have to print from "myCR". It is your responsibility to make sure that you get a copy of all supplemental material, even if you miss class.

- **Bound Notebook with Grid Paper**: Roaring Spring #77475 or Ampad #26-251 (about $2 - $6), for example. Just check to make sure it is **bound** and has **graph paper** in it. You will use this throughout the course to build yourself a reference book (see the "Reference Book Information" handout also).

- **Time. Lots!!** In your own weekly schedule please make sure that you have blocked out at least 15 hours *(possibly as much as 20 hours)*, per week, to devote to this class.

- **Paper**: Homework Paper and scratch paper, lots of it! It is fine with me if you RE-USE paper. Paper that's only been used on one side is still fine (in general) on the other side. You will also need some graph paper. Get it in a pad or a package of loose-leaf sheets (rather than stuck in a notebook), or print it from the web. Many people find it helpful to get graph paper with heavier lines on every fifth line to make counting easier.

- **Pencils**: Lots. Math problems should be done in pencil in this class (as in math classes in general). If you like softer lead (I find it writes darker easier) then you might like "2B" mechanical pencil lead (I prefer "2B" to "HB" which I find not as easy to work with).
- **Erasers**: At least one.
- **A ruler**: Important for drawing tables and graphs carefully and correctly.

- **Computer Access** for:
  - **Email:** I expect you to have access to a computer and expect to be able to contact you easily. The College uses your "mycr.redwoods.edu" email address to communicate with you so it is important that you receive those email messages; you can set it up to autoforward those emails to another email address if you prefer.
  - **"myCR" course materials**. We will have some course materials available using the "myCR" course system. (This is a separate thing from your email but you need access to a computer for this also.)

Course Requirements (subject to change with fair notice):

Participation in Class Activities: Attendance and participation are essential to the learning process. In addition, everyone benefits from your input and participation, and some work we do will be in groups! One important aspect of this course is the incorporation of active learning in class; this requires everyone's participation, particularly during in-class activities. Also, the best way to insure having a successful experience in any course is to come to every class meeting and keep up with the assignments. There will often be handouts during class to be turned in at the end of class. If you miss more than four class sessions, you may be dropped from the course.

I realize that sometimes things come up and getting to class is impossible. In those cases, just communicate with me as soon as you possibly can. This is especially important if you are missing class on a day we are scheduled to have an exam!

Note that ALL students remain responsible for ALL assignments given and that those assignments are expected to be turned in ON TIME. If you miss a class, the assumption is that you will get the necessary information to complete the assignment by the due date and be prepared to continue in the normal flow of the course.

CAUTION: the material builds from one week to the next and so
IT IS STRONGLY URGED THAT ALL STUDENTS ATTEND ALL CLASSES.

Problem Sets, assigned from the textbook: Problems will be assigned every class. There will be "Basic" problems and "Advanced" problems (see grading information). Show your work, and work neatly and legibly. There will not be time for every problem to be graded carefully, so it is even more important that you check your own work before turning it in, and ask questions if you want to make sure you are on the right track.

Pop Quizzes: At least five pop quizzes will be given during the course of the semester. You should always bring a pencil with you to class each day to be ready for a quiz.

Other assignments: There will be some assignments other than problems from the book. Some will be explained on handouts, some will be writing assignments, and some will be done in class. Also you will build your own Math Reference Book throughout the course.

Reference Book: Each student is required create his/her own personal Math Reference Book throughout the term. It should be made in a bound notebook. It should have a title page at the front, followed by a table of contents. The contents should include material learned in the course. For the most part, it is up to you to decide exactly what to include, though there will be a few items I will direct you to be sure to include. Each page should be its own separate topic.

Exams: There will be three exams amid the term and a Final Exam during Finals Week. Each of the tests amid the term will cover material since the previous test. The Final Exam will be comprehensive and will be given in two parts: For one part you will be able to refer to your own Reference Book which you will be making throughout the semester. About a week before each test you will be provided with a study guide for the exam. You do not need a scantron for any of these tests. You should always bring pencils, erasers, and your Reference Book (for grading) on test days.

Final exam date and time: Monday December 10, 10:45 AM – 12:45 PM is the officially designated 2-hour block for our class, as required by CR's Final Exam Schedule.

HELP?! If you have questions, please get help! It is ***your*** responsibility to seek help if you need it. I will answer some questions in class, but unfortunately, we will not have enough time to answer all of everyone's questions.

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http://www.redwoods.edu/District/Board/New/Chapter5/Ap5500.pdf

DUE DATES and LATE WORK: Caveat on "due dates": While we are, by necessity, confined within a certain time framework, it is important to me that you understand the material – given that, if you have made progress on an assignment but are having trouble completing it by the due date, communicate with me to make appropriate arrangements.

Schedule:

The class meets every MWF 11:40-12:55, starting Monday, August 27. The last regular class meeting is Friday, December 7, followed by the Final Exam during Finals Week. There will be no class meetings on the following dates:

- **Monday, Sept. 3 (Labor Day Holiday)**
- **Monday, Nov. 12 (Holiday for Veterans Day)**
- **Friday, November 23 (Holiday for Thanksgiving weekend – CR Closed both Thurs and Fri that week)**

Grading information (subject to change with fair notice)

To pass the class (i.e., not get an "F"), all the following requirements must be met:

- In-class assignments – at least 60% of assignments completed satisfactorily
- Homework Exercises assigned from the textbook:
  - complete a majority of "basic" problems assigned, in a legible, satisfactory way
  - Other Assignments* – complete a majority of assignments
- Exams/Quizzes –at least 60% correct
- Reference Book – reference book must exist

To get at least a "C-" you must do all of the following:

- In-class assignments – at least 60% of assignments completed satisfactorily
- Homework Exercises assigned from the textbook:
  - complete at least 80% of "basic" problems assigned, in a legible, satisfactory way
  - Other Assignments* – complete at least two-thirds of assignments
- Exams/Quizzes – at least 65% correct
- Reference Book –reference book covering basics of the material covered

To get at least a "B-" you must do all of the following:

- In-class assignments – at least 80% of assignments completed satisfactorily
- Homework Exercises assigned from the textbook:
  - complete 90% of "basic" problems assigned, in a legible, satisfactory way
  - work on at least some of the "advanced" problems
  - Other Assignments* – complete at least 80% of assignments
- Exams/Quizzes – at least 75% correct
- Reference Book – Good reference book covering over ½ of the material covered

To get at least an "A-" you must do all of the following:

- In-class assignments – at least 90% of assignments completed satisfactorily
- Homework Exercises assigned from the textbook:
  - complete 90% of "basic" problems assigned, in a legible, satisfactory way
  - work on at least half of the "advanced" problems satisfactorily
  - Other Assignments* – complete at least 90% of assignments
- Exams/Quizzes – at least 85% correct
- Reference Book – Excellent reference book representing over ¾ of the material covered

To determine +/- grades, the entire class spread will be considered at the end of the term.

* Other assignments: There will be some assignments other than problems from the book. Some will be explained on handouts, some will be writing assignments, and some will be done in class.

Suggestion of Things to Review before Math 50B begins:

Algebra Skills, of course

- rearranging algebraic expressions, especially involving radicals, rational expressions, exponential expressions, logarithmic expressions
- solving equations
- slope, equations of lines
- factoring
- completing the square
- binomial theorem
- mathematical induction

Trigonometry

- Right Triangle Trigonometric Function Definitions
- Trigonometric Function Values for "Special Angles"
- Identities, especially
  - Pythagorean Identities
  - Reciprocal Identities
  - Co-function Identities

Sequences and Series

- Arithmetic
- Geometric, especially infinite geometric series

Derivatives of Very Basic Functions

- polynomials, and "polynomial-type"
- exponential functions
- logarithmic functions
- trigonometric functions, including hyperbolic trigonometric functions and inverse trigonometric functions

Differentiation methods and strategies

- Power Rule
- Product Rule
- Quotient Rule
- Chain Rule

Numerical Estimation Methods

- Linear Approximation (sec 4.10 in Stewart 5th edition text)

Geometry:

- Area Formulas for Rectangles, Triangles, Trapezoids, Circles
- Volume Formulas for Parallelepipeds, Cylinders and Disks

Parametric Functions (some of you may have seen these before)

- graphs of curves using parametric equations

Polar Coordinate System

- connection between polar coordinates and rectangular coordinate
- graphs of polar equations