Syllabus for: Math 50A Differential Calculus	
Semester & Year:	Fall 2014
Course ID and Section Number:	MATH-50A-E6102
Number of Credits/Units:	4
Day/Time: **Location:**	MTThF 1:15-2:20pm SC 204
Instructor's Name:	Buntin
Contact Information:	Office location and hours: Tues 12-1pm, Wed 1:30-2:30pm. BY APP (Please email me) Thurs 11:30-1pm (Math Lab Hours) Phone: (707) 616-6169 Email: amber-buntin@redwoods.edu

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

A study of limits, continuity, and derivatives of algebraic, transcendental, and trigonometric functions. Applications of the derivative include optimization, related rates, examples from the natural and social sciences, and graphing of functions. The course introduces the integral and the connection between the integral and derivative. Small group work and exploratory activities (including the use of the graphing calculator) may be involved in this course. Note: Graphing calculator required, TI-83 or TI-84 recommended. *Prerequisite: Math 30 AND Math 25 with a grade of "C" or better (or equivalent), or appropriate score on the math placement exam.*

Student Learning Outcomes (as described in course outline):

1. Evaluate the limit of a function at a real number and determine if a function is continuous at a real number. Use the limit to find the derivative of a function.
2. Use the derivative to find the equation of a tangent line to a function;
3. Use the differentiation formulas to compute derivatives and use differentiation to solve applications such as related rate problems and optimization problems.
4. Analyze the rate of change of an implicit function using implicit differentiation.
5. Graph functions using methods of calculus.
6. Evaluate a definite integral as a limit.

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://redwoods.edu/District/Board/New/Chapter5/AP%205500%20Conduct%20Code%20final%2002-07-2012.pdf

Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the college catalog and on the College of the Redwoods homepage.

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.

Math 50A – Differential Calculus

Mon, Tues, Thurs, Fri – 1:15pm - 2:20pm – SC 204
Course number 036102

Instructor

Amber Buntin, Department of Mathematics

Phone: 476-4351 **Email (Preferred):** amber-buntin@redwoods.edu

My Webpage: http://msemac.redwoods.edu/~abuntin/index.html

Office hours (SC 216G): Tues 12 – 1 pm
Wed 1:30-2:30pm BY APPT via email

My Math Lab hours (LRC): Thurs 11:30-1pm

Course Description

As stated in CR's catalog: A study of limits, continuity, and derivatives of algebraic, transcendental, and trigonometric functions. Applications of the derivative include optimization, related rates, examples from the natural and social sciences, and graphing of functions. The course introduces the integral and the connection between the integral and derivative. Small group work and exploratory activities (including the use of the graphing calculator) may be involved in this course. Note: Graphing calculator required, TI-83 or TI-84 recommended. *Prerequisite: Math 30 AND Math 25 with a grade of "C" or better (or equivalent), or appropriate score on the math placement exam.*

Classroom Environment and Attendance

It is essential to our class that both the students and teacher behave in a manner that will provide a comfortable learning atmosphere. Be respectful of one another. You should not hesitate to ask questions nor feel embarrassed to ask for help.

Class time is valuable and while sometimes we will work on activities as a class, I ask that you DO NOT complete homework in class. Students miss the current material when working on assignments in class and often fall behind so it will not be tolerated.

You are expected to arrive on time and to leave when the class is dismissed. Arriving late or leaving before class is dismissed is disruptive and disrespectful to your fellow students as well as your teacher. Please be prepared with your headphones put away and cell phones SILENCED. If you must miss a day, please check with a classmate to see what you missed.

Course Learning Outcomes

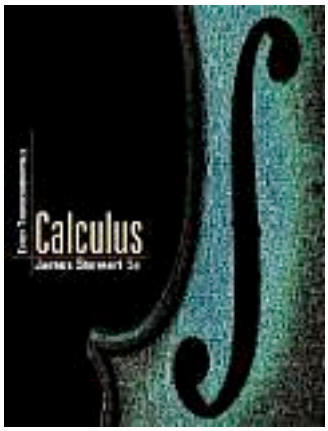
1. Evaluate the limit of a function at a real number and determine if a function is continuous at a real number. Use the limit to find the derivative of a function.
2. Use the derivative to find the equation of a tangent line to a function;
3. Use the differentiation formulas to compute derivatives and use differentiation to solve applications such as related rate problems and optimization problems.
4. Analyze the rate of change of an implicit function using implicit differentiation.
5. Graph functions using methods of calculus.
6. Evaluate a definite integral as a limit.

(These CLOs will be assessed throughout the semester and may take the form of, but are not limited to, a written/paper assignment, an imbedded test question, or an OPTIMATH quiz)

Grades

Homework.....25%	93-100%.....A
Activities.....10%	90-92%.....A-
Quizzes.....10%	87-89%.....B+
Exams.....30%	83-86%.....B
Final Exam.....25%	80-82%.....B-
	77-79%.....C+
	70-76%.....C
	0-69%.....D-F

*** Final grade is at the professional discretion of the instructor ***



Required Materials

Text

Calculus, Early Transcendentals, 5th Edition, by James Stewart, Brooks Cole Publishers. The ISBN is 0-534-39321-7 is available in the following modes

- The textbook is available for check out for the semester at the library. Go over there right after class and get one ASAP!!
- Purchase textbook online via Amazon, Chegg, Abe Books etc....make sure you use the correct ISBN and get the 5th edition.
- There is also a student solution manual that is OPTIONAL...ISBN 0-534-393330

Supplies

A graphing calculator is **required** (TI-83+ or TI-84 recommended) and available to rent from math department for $20 per semester (see Betsy Buchanan in the ASC), a composition notebook (used as reference book), pencils and erasers, a **binder and notebook paper to complete homework**, ruler or straightedge and graph paper.

Homework

Homework problems will be assigned nearly each lecture period, and are handed in on the announced due date (typically two class periods later) at the beginning of class. We will have about 5-10 min reserved for howework questions each class. You are encouraged to work together!. Assignments are worth 10 points each. **I will pick 4 problems to grade (2 points per problem) and 2 points are reserved for neatness and completeness.** It will benefit you to check (NOT COPY) the answers to the odd numbered problems in the back of the book.

At the end of the semester the **two** lowest homework scores will be dropped from your grade. Due to this, **I do not accept late work**. It is your responsibility to ensure that you get your HW turned in; if you know you will be missing class, you should turn your HW in **before** the due date, send to class with a friend, or use dropbox in hallway of second floor in Science building (put MY name on the top of paper). **In the case of an emergency**, I will also accept homework that is scanned and emailed to me BEFORE start of class on the due date (please email as a **.pdf** file and make sure it is legible).

I recommend being organized and keeping all "scratch work," and returned work in a binder. You are expected to use proper mathematical notation as learned in class. All HW should be neat, legible and well organized. Messy papers will get point deductions and may even be returned ungraded. (See "Homework Guidelines" Handout).

Reference Book

You will be keeping a reference book that will contain important information you have learned throughout the semester such as definitions, formulas, and examples. This reference book is **not a book for you to write all of your notes in.** It is for you to write up a **summary of the important information that you have learned.** Some students already write all of their in-class notes VERY nice and neat and I will accept this as your composition notebook, but you must get my approval. I will collect your reference book during exams and grade them as a homework assignment. I suggest doing a nice job on your reference book because I will allow you to use the reference books on quizzes throughout the semester (See **Reference Book Instructions** for more info).

Quizzes

There will be a quiz each week there is not an exam (in-class or take-home). The required quizzes will be available online for a week via Optimath. On Friday, the closing day of the quizzes, a version will be given at the beginning of class. I will take the larger of your in class quiz and the average of your in class (or take home) quiz with your Optimath score. The quiz will usually be over the material we had covered that previous week. You may repeat each quiz **online** as many times as you want before the due date.

I encourage you to do the weekly quizzes online until you receive at least a 7/10 on the quiz (but shoot for 10/10). The Optimath system also allows you to review the solution to each quiz once completed so you can figure out exactly where you went wrong. Each time you repeat the quiz you will be presented with new questions. You will get a chance to work on the Optimath system in class the end of the first week or beginning of the second week to get comfortable with the system. Optimath can be found at http://msenux2.redwoods.edu/optimath. Each quiz is worth 10 points each and the number of questions will vary depending on the difficulty of the material.

Exams and the Final

There will be 2 or 3 in class exams (30% of your grade) throughout the semester and a **required** 2-hour comprehensive final examination (25% of grade) at the end of the semester. I will notify you **at least one week** in advance as to the date of each in class exam. Before each exam, you will receive a study guide or practice problems. I will schedule a study session before each exam (either outside or inside of class). All exams need to be taken in class ON THE DAY OF THE EXAM unless you have made prior arrangements with me. There are **NO EXAM MAKE-UPS, so be sure to make all travel plans accordingly**. Bring a pencil, your calculator and be ready to show me your math skills!

******Final Exam**** Wednesday, Dec 10th, 1:00-3:00pm**

If you take exams in the testing center, you need to make sure you make an appointment in advance so that you take the final exam at the designated time and send me reminders.

- If you have a documented disability or believe you can benefit from any of the services offered by Disabled Student Programs & Services (DSP&S), please contact the DSP&S office (Building T20, behind Bookstore) at 476-4280 phone or 476-4418 fax.

Tutoring

- **CR Math Lab.** I encourage you all to enroll in MATH 52 for ½ unit (E6575) or 1 unit (E6576) of credit and in order to obtain supplementary help. This is the cheapest for credit tutoring option available on campus and I can't stress enough how valuable it is. (Math lab is located in the back of the Library).
- **MATH 252** Supervised Tutoring (E6960 No Credit) This is a free, no credit option to get math tutoring help. **If you do not need units** or want math help but cannot fulfill the hour requirements for mathlab, then this is the option for you!
- **OPTIMATH** review assignments give immediate feedback and written out solutions: http://msenux2.redwoods.edu/cgi-bin/online/f14/OTportal.cgi
- The **CR Math Jam** webpage is a great way to reveiw topics intermediate algebra and below and contains lessons as well as OPTIMATH assignments: http://mathrev.redwoods.edu/mathjam/?s=public

How to Succeed in this Course

- ✓ Read your text. It is best if you read the section of the text ahead of the scheduled lecture date on that topic.
- ✓ Be in class on time every day.
- ✓ Do your homework! Plan to spend at least 1-2 hours outside of class for every hour inside of class. That is the minimum investment of time for success in this course.
- ✓ Work with classmates. Mathematics is a social subject (but not a spectator sport). Working with fellow students helps in your own understanding of the ideas of the course (as you explain and/or hear others explain key concepts and procedures).
- ✓ READ and KEEP your returned work. When you get work back, look for any remarks that I have made. Keep your work in a binder to keep a record of your scores. This is to make sure I correctly enter your grades.

View Your Grades

You may view your grade anytime by going to my webpage:

http://msemac.redwoods.edu/~abuntin/Math50A/grades/grades.html

Grades will be updated regularly and it will be expected that you will be responsible for checking your grade often and coming to see me if you have any problems.

To check your grade, you will need to enter the following information:

Username: Last name, First name

Password: CR student ID number (with **NO** leading zero)

Notice that you must use a capital letter for the first letter in your first and last name. There is also a **comma and a space** between your last and first name. If you enter your information incorrectly, the system will not let you log on. **Email me immediately if you are having problems.**

Cancelled Classes

Those driving long distances to attend classes are advised to call (707) 476-4210 before driving to the CR campus. Choose #5 from a menu of choices. You will then be advised of any cancelled classes for the day (math/science). Thus, you can avoid the frustration of driving to campus, only to find that your class has been cancelled. I will typically send out an email as well.

Faculty Withdrawal of Students

It is the policy of the College of the Redwoods Math Department to exercise a "Faculty Withdrawal" for any student who has missed more than 15% of the class meeting time (prior to the drop deadline), due to the severely diminished likelihood of a successful outcome in the course. It is important to note that, if it is the student's intention to withdraw from the course, the responsibility remains with the student to ensure the proper paperwork has been filed – that is, students are not to assume the teacher will file the "Withdrawal" automatically.

Academic Honesty

Cheating is not accepted. If you are cheating, you will receive a grade of F in the course. Any violation of academic misconduct will be dealt with according to the procedures and sanctions proscribed by the College of the Redwoods. 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

Final words

A few words about my expectations for you and myself in this course: My responsibilities include coming to class prepared to teach you mathematics, giving clear lectures, assigning carefully chosen homework problems that are relevant to our course and carefully preparing exam questions that accurately measure your progress in the course. Additionally, I am responsible to be available to you outside of class for consultation in office hours (by appointment…just email me ☺).

Likewise, I believe that you are ultimately responsible for your college education and I expect you to come to class motivated to learn the material. This involves keeping up with homework assignments, seeking additional help, either from me or from the many resources available to you here on campus, before it is too late.

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********** Syllabus Subject to Change **********
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Announcements will be made in class. If you are absent, it is your responsibility to check your email AND with your fellow classmates!

Guidelines for Writing Homework

Please follow these guidelines when completing homework assignments.
It makes my grading experience much more pleasant ☺

1. Complete all homework assignments on a **separate sheet of paper.** You **may use both sides** of the paper. Do NOT complete assignments on the pages of your textbook.
2. **Staple** all homework in the upper left hand corner.
3. **Label** your homework with your name, course number, and section number in the upper right hand corner (see example below).
4. Write your problems in order **down** the page. Please **skip a line** between problems.
5. **Circle**, **box,** or **highlight** your answers to each exercise so I can find your answer quickly.
6. Please use **pencil** when writing your homework, and please write legibly and neatly. Presentation is a component of your homework score.
7. Be sure to **show your work** when solving a problem. A problem with just the answer and no work shown will receive NO CREDIT.
8. **Cut or tear off** any frilly edges on paper torn from a notebook.
9. When creating a graph, you **MUST use GRAPH PAPER and a RULER** or you will be asked to redo the assignment or will get a zero on the assignment.

Staple in upper left corner.

Ima Student
Math 50A
1.2

HW 1.2: 4, 11, 20, 41

4. Solve $-26x + 84 = 48$

$$-26x + 84 = 48$$
$$-26x = 36$$
$$\boxed{x = -\frac{36}{26}}$$

11. Solve $19x + 35 = 10$

$$19x + 35 = 10$$
$$19x = -25$$
$$\boxed{x = -\frac{25}{19}}$$

20. Solve $-8 - 8(x - 3) = 5(x + 9) + 7$

$$-8 - 8(x - 3) = 5(x + 9) + 7$$
$$-8 - 8x + 24 = 5x + 45 + 7$$
$$-8x + 16 = 5x + 52$$
$$-13x = 36$$
$$\boxed{x = -\frac{36}{13}}$$

41. Solve $Ax + By = C$ for y

$$Ax + By = C$$
$$By = C - Ax$$
$$\boxed{y = \frac{C - Ax}{B}}$$

Reference Book Guidelines

Math 50A – Fall 2014

Your reference/composition notebook has many useful purposes:

- It helps you **study for exams** by *re-writing* in-class notes and determining what information is important to YOU.
- **It improves overall organization** of notes.
- **You can use your book on quizzes** provided you turn it in to be graded for in-class exams and keep it up to date.
- You can use it to help study in your **future math courses**!

Requirements:

- You should purchase a **composition notebook**...graph paper is best, but a lined one will do just fine. You can also use a regular spiral bound notebook.
- This book should be **SEPARATE from your in-class notebook** (unless class notebook is approved).
- **Write your name and CONTACT INFO inside of front cover/cover page**. In case you lose your book, you should have your name and an email address or phone number or address.
- **Skip at least 3** pages in the beginning of your book for a **Table of Contents** (more if you write big). You should include description of the material you have written on a page, and page number (see the table of contents of your textbook or any book).
- **Number your pages** in the top right, or lower left.
- **Summarize concepts** you have learned using your own words. Make notes to yourself about strategies used, proper notation and your common mistakes.
- You must **write "a little something" from EACH section**. Even if you "know it already." At the end of the semester, come the last exam, things that you know in the beginning of the semester, you may no longer have memorized.
- Your reference book will be **collected DURING Exams** and graded as a written homework. It will be worth **10 points each time it is graded**.

Helpful Hints:

- **Do a little bit at a time.** Do not try to cram everything in there the night before a quiz. Have your book out when you are doing homework and maybe jot down a particularly challenging example you encounter. In class, sometimes I will say "you might want to put this in your comp book." Put a star by that info and copy it into book **right after** of class so you remember.
- **Use colors!** Maybe write/highlight definitions in green, examples in purple, important things to remember in red...and so on. Be creative!
- **Don't write/highlight too much** as it will be difficult to find what you're looking for when using it as a reference.
- **Make it YOURS!** Use colors, doodle in it, make it pretty but try to keep it neat :)