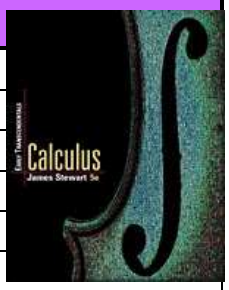
Syllabus for **MATH-50B** (D6085/E6086/K6088) **Calculus II: Integral Calculus** *College of the Redwoods* (DelNorte/Eureka/KlamathTrinity)		
Semester & Year	Spring 2019	
Course ID and Section #	MATH-50B-D6085, MATH-50B-E6086, MATH-50B-K6088	
Instructor's Name	Tami Matsumoto	
Day/Time	MWF 11:40am-12:55pm, 1/22/19-5/16/19	
Location	Eureka: LRC105. CRDN: DM28. KTIS: HTEC2	
Number of Credits/Units	4 units	
Contact Information	*Office location*	SC 205B, behind copier upstairs in SC Bldg
	Office hours	Mon 10:15am, Wed 2:45pm, plus available TThF in MathLab (T 11:30-1:30, Th 11:30-12:30, F 2-3pm). Also available by chance and by appointment.
	Phone number	Office: (707) 476-4543
	Email address	tami-matsumoto@redwoods.edu Include "**Math 50B**" as ***part of*** the email Subject line
	Social Media	https://twitter.com/tamimathcr https://www.facebook.com/TamiMathCR
Textbook Information	*Title & Edition*	"***Calculus Early Transcendentals***" 5th edition
	Author	James Stewart
	ISBN	0534393217 (10), 978-0534393212 (13)
Recommended Solutions Manual	*Title & Edition*	**Single Variable Calculus Early Transcendentals - Student Solutions Manual for 5th ed ET**
	Author	Daniel Anderson, Jeffrey A. Cole, Daniel Drucker
	ISBN	0534393330(10), 978-0534393335 (13)
Recommended Study Guide	*Title & Edition*	**Study Guide for Stewart's Calculus: Early Transcendentals Single Variable, 5th edition**
	Author	James Stewart
	ISBN	0534393314 (10), 978-0534393311 (13)



Course Information (excerpted from the Course Outlines of Record):

Math 50B Catalog Description from Course Outline of Record

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.

Note: A graphing calculator is required.
Prerequisite: Math 50A

Math 50B Course Learning Outcomes from Course Outline of Record

1. Evaluate definite and indefinite integrals using a variety of integration formulas and techniques including the evaluation of improper integrals.
2. Apply integration to areas and volumes, and other applications such as work or length of a curve.
3. Apply convergence tests to sequences and series and represent functions as power series.
4. Graph, differentiate and integrate functions in polar and parametric form.

College of the Redwoods general information (not specific to Math classes)

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 Disability Services and Programs for Students. Students may make requests for alternative media by contacting DSPS (at 707-465-2352 at DN, or 707-476-4280 in Eureka, or 530-625-4821 Ext 23 at KTIS).

Academic Support

Academic support is available at Counseling and Advising and includes academic advising and educational planning, Academic Support Center for tutoring and proctored tests, and Extended Opportunity Programs & Services, for eligible students, with advising, assistance, tutoring, and more.

Academic Honesty

In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. In cases involving academic dishonesty, determination of the grade and of the student's status in the course is left primarily to the discretion of the faculty member. In such cases, where the instructor determines that a student has demonstrated academic dishonesty, the student may receive a failing grade for the assignment and/or exam and may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website at: http://www.redwoods.edu/board/Board-Policies/Chapter-5-Student-Services, and scroll to AP 5500. 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 website.

Disruptive Classroom Behavior

Student behavior or speech that disrupts the instructional setting will not be tolerated. Disruptive conduct may include, but is not limited to: unwarranted interruptions; failure to adhere to instructor's directions; vulgar or obscene language; slurs or other forms of intimidation; and physically or verbally abusive behavior. In such cases where the instructor determines that a student has disrupted the educational process a disruptive student may be temporarily removed from class. In addition, he or she may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website at: http://www.redwoods.edu/board/Board-Policies/Chapter-5-Student-Services and scroll to AP 5500.

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 website.

Emergency Procedures for the Eureka campus:

Please review the campus evacuation sites, including the closest site to this classroom (posted by the exit of each room). The Eureka **campus emergency map** is available at: (http://www.redwoods.edu/aboutcr/Eureka-Map; choose the evacuation map option). For more information on Public Safety, go to http://www.redwoods.edu/publicsafety. In an emergency that requires an evacuation of the building:

- Be aware of all marked exits from your area and building.
- Once outside, move to the nearest evacuation point outside your building:
- Keep streets and walkways clear for emergency vehicles and personnel.
- Do not leave campus, unless it has been deemed safe by the Incident Commander or campus authorities. (CR's lower parking lot and Tompkins Hill Rd are within the Tsunami Zone.)

RAVE – College of the Redwoods has implemented an emergency alert system. In the event of an emergency on campus you can receive an alert through your personal email and/or phones at your home, office, and cell. Registration is necessary in order to receive emergency alerts. Please go to https://www.GetRave.com/login/Redwoods and use the "Register" button on the top right portion of the registration page to create an account. During the registration process you can elect to add additional information, such as office phone, home phone, cell phone, and personal email. Please use your CR email address as your primary Registration Email. Your CR email address ends with "redwoods.edu." Please contact Public Safety at 707-476-4112 or security@redwoods.edu if you have any questions.

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.

In the event of an emergency requiring immediate assistance:

1. Someone in class should **call 9-1-1**: can use telephone at Teachers station or cell phone (if possible). It could take minutes for help to arrive, so
2. someone else in class should also call CR Security's Emergency number: **707-476-4111** – or just dial "**4111**" on the telephone at the Teachers station or at a "Courtesy Phone" – and/or hit the **"Panic Button" on a CR telephone** (Line 2) – to inform CR Security of the emergency.

In case of fire,

- calmly exit the classroom and go down the stairs to leave the building. **Do not use the elevator**.
- At the bottom of the stairs (on either side) **pull the Red Fire Alarm** on the wall near the exit (before exiting the building).

In case of earthquake: **DUCK—COVER—HOLD ON**.

- The parking lot and Highway 101 are in the Tsunami Zone, so **WAIT** until we know whether it is safe to drive away. **Don't just leave!**

In case of Power Outage

- The classroom (and office) telephones probably will NOT work.
- The doors in some buildings on the Eureka campus will automatically lock – so if you exit a room and the door closes, the door may automatically lock behind you and card-keys won't work

Emergency Procedures for the Del Norte campus:

Please review the campus evacuation sites, including the closest site to this classroom (posted by the exit of each room). The Crescent City campus emergency map is available at (http://www.redwoods.edu/delnorte/Maps-and-Directions; scroll down to the Safety Map). For more information on Public Safety, go to http://redwoods.edu/publicsafetyIn an emergency that requires an evacuation of the building:

- Be aware of all marked exits from your area and building.
- Once outside, move to the nearest evacuation point outside your building:
- Keep streets and walkways clear for emergency vehicles and personnel.
- Do not leave campus, unless it has been deemed safe by the campus authorities.

RAVE – College of the Redwoods has implemented an emergency alert system. In the event of an emergency on campus, you can receive an alert through your personal email, and/or phones at your home, office, and cell. Registration is necessary in order to receive emergency alerts. Please go to https://www.GetRave.com/login/Redwoods and use the "Register" button on the top right portion of the registration page to create an account. During the registration process you can elect to add additional information, such as office phone, home phone, cell phone, and personal email. Please use your CR email address as your primary Registration Email. Your CR email address ends with "redwoods.edu."Please contact Public Safety, 707-476-4112, security@redwoods.edu, if you have any questions.

Emergency Procedures for the Klamath Trinity Instructional Site:

Please review the responsibilities of, and procedures used by, the College of the Redwoods, Klamath-Trinity Instructional Site (KTIS) to communicate to faculty, staff, students and the general public during an emergency. It is the responsibility of College of the Redwoods, Klamath-Trinity Instructional Site (KTIS) to protect life and property from the effects of emergency situations within its own jurisdiction.

1. In the event of an emergency, communication shall be the responsibility of the district employees on scene.

    a. Dial 911, to notify local agency support such as law enforcement or fire services.
    b. If safe to do so, notify key administrators, departments, and personnel.
    c. If safe to do so, personnel shall relay threat information, warnings, to ensure the school community is notified.
    d. Contact Jolene Gates 530-625-4821 to notify of situation.
    e. Contact Hoopa Tribal Education Administration office 530-625-4413
    f. Notify Public Safety 707-476-4111.

2. In the event of an emergency, the responsible district employee on scene will:

    a. Follow established procedures for the specific emergency as outlined in the College of the Redwoods Emergency Procedure Booklet.
    b. Lock all doors and turn off lights if in lockdown due to an active shooter or similar emergency.
    c. Close all window curtains.
    d. Get all inside to safe location Kitchen area is best internal location.
    e. If a police officer or higher official arrives, they will assume command..
    f. Wait until notice of all is clear before unlocking doors.
    g. If safe to do so, move to the nearest evacuation point outside building (Pooky's Park), directly behind the Hoopa Tribal Education Building.
    h. Do not leave site, unless it has been deemed safe by the person in command.

Additional Information about services and help available to CR Students:

Tip Line

Anyone wishing to make an anonymous report of a crime may use the tip line at 707.476.4555
Or by emailing CRTip@redwoods.edu.
See also: https://www.redwoods.edu/publicsafety/How-do-I-File-a-Report

Students get Microsoft Office365 FREE

All CR Students and faculty can get OFFICE 365 for *free* -- for PC, Mac, Smartphone, Tablet – up to 5 devices -- using your @mycr.redwoods.edu email address.

- Go to: http://office.com/getoffice365 (If you get an Error message using the hyperlink, copy and paste the url directly into your browser.)
- Enter your "mycr" student email account (e.g., jdoe555@mycr.redwoods.edu)
- Go into your student email account; click on the verification link in the Microsoft email.
- The link will take you back to the website and you can download the software at that time, OR access the account at a later time via: https://login.microsoftonline.com

See also: https://www.redwoods.edu/online/Help-Student

Mathematica -- symbolic mathematical computation program, sometimes called a computer algebra program, used in many scientific, engineering, mathematical, and computing fields.

All faculty, staff, and students are welcome and are entitled to a free version of Mathematica for personal use. See: https://www.redwoods.edu/math/Mathematica

Associated Students of College of the Redwoods (ASCR)

- ASCR is run by and for CR students. If you aren't involved already, you might like to check it out. See https://www.redwoods.edu/ascr/
- There are many student clubs and organizations. Contact ASCR if you would like to start a new one! https://www.redwoods.edu/ascr/Orgs

Support Classes (a partial list of what's available for students at CR's Eureka campus)

Classes for Academic Support (register in one or more of these to benefit from them)

- Math Lab classes: Drop-in math help, during open hours. There are different math lab class options for Math 50B students: Math 52 (0.5-unit or 1.0-unit) or Math 252 (0 units)
- LIGHT Center classes open to all students: GUID 143, 145, 146, 147, 148, 205, 215.
  For information: 476-4290 (Eureka campus)
  NOTE: Many GUID classes can be taken by any students (even if not DSPS)
- ESL classes such as ESL 211 are free and support academic students. You can sign up in class!
- Math Review Courses (for future reference): Math 301, Math 302, Math 303 – short, 9 hours of class time total
- CIS 210: For help with computers, computer programs/software, such as Excel, Canvas

Student Services (a partial list of what's available for students at CR's Eureka campus)

ACADEMIC SUPPORT AVAILABLE AT CR

- Academic Support Center (ASC) -- variety of services to help students succeed, including free tutoring and proctored testing. https://www.redwoods.edu/asc
    - Testing Center in ASC -- for make-up tests, and when accommodations cannot be made in the regular classroom: https://www.redwoods.edu/asc/Testing-Policies-Procedures/Accomodations
    - Tutoring Services -- free for all CR students, by appointment (you do not need to be enrolled in a Math Lab class to meet with an ASC Tutor). https://www.redwoods.edu/asc/Tutoring-Services
- Calculator Rental -- https://www.redwoods.edu/math/Resources/Calculator-Rentals
- Math Lab -- students must be registered in a Math Lab course to receive math help in the Math Lab. https://www.redwoods.edu/math/Lab There are many sections of MathLab associated with different math classes. Any student can sign up for non-credit Math Lab (Math 252) to get help with math-related work. This course is available at DN, EKA, and KT
- Tutoring and Writing Help: The Eureka Campus ASC provides help and tutoring for writing and many other classes. Tutoring is available, by appointment, to any CR student (you do not have to be registered in a special class). Some special programs (such as TRiO, EOPS, DSPS) also have tutoring available for students in those programs.
- Math Textbooks – many available for check-out from Library; also free textbooks online for Math 276, Math 376, Math 380, Math 120. https://www.redwoods.edu/math/Free-Math-Textbooks; also copies of texts in the MathLab class for use while you are there. Some special programs (such as TRiO, EOPS) may have textbooks available for students in those programs.
- Mathematica Software -- https://www.redwoods.edu/math/Mathematica
- Online Practice in Mathematics, "OPTIMATH" -- http://msenux2.redwoods.edu/optimath
- Math Review website -- https://www.redwoods.edu/math/Resources-Algebra-Review

SPECIAL PROGRAMS AT CR

- **CalWORKs** – California Work Opportunity & Responsibility to Kids (CalWORKs) assists students who are parents of children under age 18, who are receiving assistance. https://www.redwoods.edu/calworks
- **DSPS** – Disability Services and Programs for Students (DSPS) is a special program funded by the State of California to provide services, accommodations and classes to students with disabilities. https://www.redwoods.edu/dsps
- **EOPS** – Extended Opportunity Programs and Services (EOPS) is a state-funded program designed to provide financial assistance, support and encouragement for eligible low-income students. https://www.redwoods.edu/eops
- **TRiO** – The TRiO Student Success Program is a multi-faceted support program—offering assistance and encouragement to low-income, first-generation students, and/or students with disabilities. https://www.redwoods.edu/trio
- **Honors Program** – a challenging program designed for successful transfer to a competitive four-year college. https://www.redwoods.edu/honors/
- **Veteran Resource Center** – to support and facilitate academic success for Active Duty Military, Veterans and Dependents attending CR through relational advising, mentorship, transitional assistance, and coordination of military and Veteran-specific resources. https://www.redwoods.edu/vets

Other Services (a partial list of what's available for students at CR's Eureka campus)

OTHER SERVICES FOR CR STUDENTS

- **Child Development Center** (CDC) -- subsidized childcare for eligible, low income families. Private-pay childcare may be available if space allows. https://www.redwoods.edu/cdc
- **Food Pantry / Resource Center** -- https://www.redwoods.edu/resourcecenter
- **Health Services for Students** – Free Flu Shots (while they last). Health care available at little or no cost at the Student Health Center during open hours. PE building 114. 476-4149. Closed Holidays and Breaks. https://www.redwoods.edu/studenthealth
- **Multicultural and Diversity Center** – in LRC 103

- **Parking information** -- Permit is required. https://www.redwoods.edu/publicsafety/Parking
- **Scholarships** --
  - CR Scholarship office offers scholarships from dozens of courses -- all on just one application. https://www.redwoods.edu/financialaid/Scholarships
  - Outside Scholarships to apply for (a partial list) https://www.redwoods.edu/financialaid/Types-of-Aid/Scholarships/Scholarship-List

- **Security/Public Safety** -- Security Officer is on duty 24 hrs/day, 365 days/yr.
  - Can be reached from "Courtesy Phones" and call boxes located across campus.
  - Emergency Line: 476-4111 (Non-emergencies 476-4112) https://www.redwoods.edu/publicsafety

- **Technical Support**:
  - Email its@redwoods.edu at any time and get a response within one business day.
  - Phone (707) 476-4160 or 800-641-0400, ext. 4160 (8am-4pm Mon-Fri).

ADDITIONAL BENEFITS TO CR STUDENTS

- Art Gallery -- Admission is Free during open hours. https://www.redwoods.edu/artgallery

- Bus Pass -- There will be bus passes in the Bookstore that CR Students can purchase at 50% off (31-day pass). EOPS will provide them for students in that program.

- Humboldt Botanical Gardens -- Open Wed-Sun. The gate is kept closed to keep deer out; during open hours, walk in and be sure to close the gate. http://www.hbgf.org/visit

- Preferred Name in Canvas: Students now have the option of having an alternate first name appear in Canvas. Use this form from the Admissions website https://www.redwoods.edu/Portals/28/Forms/Student%20Information%20Update%20form.pdf?ver=2016-08-30-140231-443 . Social Security card is ONLY required for official name change – Not required for Canvas "preferred name" change.

- Workshops – such as Financial Literacy, Support Groups – check CR Events list https://www.redwoods.edu/events

Mathematics Placement Statement for Math 50B

We want every student to be in the right mathematics class.
Is Math 50B the appropriate mathematics class for you?

You may feel that your previous mathematics experience indicates that you should start at a higher-level course than Math 50B (Integral Calculus).

If one of the following criterion holds, then you should consult with your instructor to move to a higher-level mathematics course.

- You completed two semesters of calculus at another college.
- You earned a score of 4 or more on the AP Math BC exam.

Math 50B Integral Calculus

Information follows in the following sections:

1. About Calculus
2. Materials you will need
3. Important Semester Dates
4. Course Content Organization
5. Course Requirements
6. Homework
7. Creating Your Own Personal CALCULUS REFERENCE BOOK
8. Sources of Math Help
9. Grading Information
10. Tentative Plan

1. About Calculus

cal·cu·lus (/kalkyələs/)
noun

1. the branch of mathematics that deals with the finding and properties of derivatives and integrals of functions, by methods originally based on the summation of infinitesimal differences. The two main types are *differential calculus* and *integral calculus*.
2. MathematicsLogic : a particular method or system of calculation or reasoning.

Calculus is the mathematical study of behaviors of functions – in particular, rates of change and how things change. It is extremely important to have good algebra skills, because then you can focus on the new material.

You will need to learn (a la Bloom):

- Knowledge
    - Definitions
    - Types of Series
    - Different Integration Methods
- Comprehension
    - How related things compare (similarities, differences)
    - What different things mean or tell us
    - How to interpret summary information
    - How to make predictions based on limited information

- Application
    - How to apply what you know to new situations
    - How to make good use of information
    - How to solve problems, combining together what you have learned
- Analysis
    - How to make inferences from analysis of complex information
    - Recognizing importance and significance of component parts
- Synthesis
    - How to understand a situation and pull together all that you have learned, to reach appropriate conclusions and inferences
- Evaluation
    - How to look back to assess what was done (by you or others) and evaluate the results

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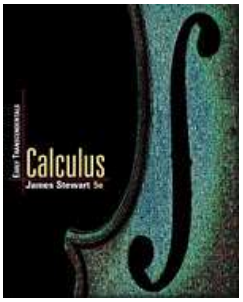
2. Materials you will need:



- **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.
    - **Recommended: <u>Student Solutions Manual</u>** (ISBN 0534393330 / 978-0534393335); **<u>Study Guide</u>** (ISBN 0534393314 / 9780534393311)
- **Graphing Calculator**: A Graphing Calculator, such as a TI-83 Plus, TI-84, or TI-89. A limited number are available **<u>for rent</u>** – in the Math Lab, ASC 101, CR Eureka Campus.
- **Bound Notebook with Grid Paper**: Roaring Spring #77475 or Ampad #26-251 (about $2 - $6), for example. Check to make sure it is **bound** and has **graph paper** in it. You will use this to build yourself a reference book (see the "Reference Book Information" also).
- **Time. Lots!!** In your own weekly schedule, please block out at least 15 more hours *(possibly as much as 20 hours)*, per week, to devote to this class.
- **Supplemental Handouts**. There will be lots of handouts some of which you may 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.
- **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 regular 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.
    - **Online resources, including Canvas**. We will have some course materials available using Canvas. (This is separate from your email but you need access to a computer for this also.)

3. Important Semester Dates

Class meets MWF 11:40am-12:55pm, starting January 23, 2019, and runs 15 weeks, followed by Finals Week. Class meets in person in room LRC105 on the Eureka campus, and is shared via TelePresence to room DM28 at the DelNorte campus and room HTEC2 at the Klamath-Trinity Instructional Site.

Important dates for Spring 2019:

- Wednesday, January 23 - **First day our class meets**
- Friday, Feb. 1 - *Last Day to drop without a "W"* on your transcript and receive a refund
- Friday, Feb. 15 – **No Classes** ("Lincoln Day"). Many offices will remain open.
- Monday, Feb. 18 – **Washington Day HOLIDAY**. No Classes. Campus will be CLOSED.
- Thursday, March 7 - *Last Day to petition to graduate / receive certificate* this semester
- Monday-Saturday, March 18-23 ***Spring Break*** - No Classes
- Friday, April 5 - *Last Day for Student-Initiated Withdrawal* (no refund, and get a "W")
- Saturday, April 6 – ***Humboldt Math Festival*** at Adorni Center, 12-4pm (*Attendance not required, but you'll enjoy it!*)
- Friday, May 10 - Last regular class session
- **Finals Week: May 11-17**.
    - Math 50B Comprehensive Final Exam **10:45am-12:45pm** on **Monday, May 13**
- Friday, May 17 - Last day to submit any late work.

4. Course Content Organization

The material will be grouped into four "Learning Units" with a Unit Exam at the end of each of Units 1, 2, and 3, and a Final Exam at the end of the term, which will be comprehensive.

Tentative Content Organization:

- Unit 1: Laying the Groundwork – Fundamental Theorem of Calculus (5.3-5.6), Antiderivatives (4.10), Taylor Polynomials introduction (3.11), Some integration methods (5.5, 7.2, 7.4), Areas (6.1), Parametric and Polar curves (10.1, 10.3), Sequences and Series (11.1, 11.2).

- Unit 2: Digging Deeper – Volumes (6.2, 6.3), More integration methods (7.1, 7.3, 7.8), Calculus with parametric and polar (10.2, 10.4), Series tests (11.3, 11.4, 11.5).

- Unit 3: More Series Tests (11.6, 11.7), Power Series (11.8), More Integration Techniques (7.5, 7.6, 7.7), Arc Length and Surface Area (8.1, 8.2), Differential Equations (9.1-9.3, 9.6, 9.7).

- Unit 4: More with Power Series (11.9-11.11), more with Differential Equations (9.4-9.5), and maybe Work (6.4), and Average Value (6.5) and other applications (8.3, 8.4).

The Final Exam is comprehensive (scheduled for Monday, May 13, 10:45am-12:45pm).

5. **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 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 "Practice Problems" and "Written Problems" – "Basic" and "Advanced" – (see "Homework"). Work neatly and legibly. There will not be time for problems to be graded carefully, so it is very 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: There may be pop quizzes. You should always bring a pencil with you to class each day to be ready for a quiz. Bring your reference book (which may be allowed for some quizzes).

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 to 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 one separate topic. Suggestion: note the ***textbook*** page # to refer back to, if needed.

Exams: There will be three exams amid the term and a Final Exam during finals week. The Final Exam will be comprehensive and will be given in two parts: For one part of the Final Exam you will be able to refer to your own Reference Book which you will be making throughout the term. About a week before each test you will be provided with a study guide for the exam. You do not need scantrons. You should always bring pencils, erasers, and your Reference Book (for grading) on test days, which will be announced at least one week in advance. — NOTE: Missing a scheduled exam without making prior arrangements could result in "F" on that exam

Final exam official date and time: Monday May 13, 10:45am-12:45pm, during finals week. Note that this is a *different time* from our regular class meetings.

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

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. It is of greater value that you understand the material and can do it yourself than turning it in on the "due date" without comprehension.

6. Homework — *What, When, Why, How?*

There will be a homework assignment associated with essentially each class meeting. In general, work to finish your homework before the next class meeting, but if you have questions, you will be allowed to turn in your homework two classes after it is assigned. Since this could result in overlaps of assignments, you must be very careful to keep your assignments clearly labeled, but this system allows you to ask for clarification, if needed, so that you can then finish up that assignment and still turn it in – and understand it.

The purpose of having you do homework exercises is

(1) to give you practice with a variety of problems, and
(2) to help you to learn to write responses correctly, and
(3) to help you get some feedback so that you know what you are doing right and what you need to improve on. Note: you should always check your answers in the back of the book.

I will usually assign problems that have answers in the back of the book so that you can check your work as you go along and get help when you need to. Generally, we will go over a few problems in class, but if you still have more questions, then please be sure to seek out help from me or from others, outside of class time.

There will be two categories of homework problems assigned: "Practice" and "Written." The "Practice Problems" ("PP") are just that – for you to get more Practice. It is ok for these to look like scratch work. You do not need to spend time "making these pretty." The "Written Problems" should be nice and neat and "pretty," though. Since problems can be extremely time-consuming, there will be "Basic" and "Advanced" Written Problems. Everyone is expected to do "Basic" problems to pass the class. You only need to do "Advanced" problems if you want a grade of B- or higher. Problems designated "Advanced" might be more challenging, or maybe just time-consuming or may be just for more practice.

Here are some very general instructions for how I want you to do your homework:

1. When you turn in your homework, turn in the "Practice Problems" (PP) separately from the "Written Problems." Within each category (PP or Written), make sure that the problems are in the correct order. Do not run the problems into each other – each problem should be clearly marked and easy to find.

2. Label each homework assignment clearly in the center at the top with the assignment number: "HW #1 – PP" or whatever it is.

3. At the top <u>right</u> side of the page, write <u>your name</u> and "Math 50B" and the date.

4. Use pencil, and erase carefully when necessary.

5. Label each problem clearly. For the "Basic" and "Advanced," paraphrase the question – you do not need to copy all the words of the question exactly as is in the book, but write enough of the directions so that anyone looking at it (without the book in front of them) can see what the problem is about.

6. Show some work – do not just turn in a list of answers. "PP" problems can look like scratch work, but it is extremely rare that you can get an answer without writing down any intermediate steps. "Written" problems should be written neatly so that your work can be followed easily.

7. Work down the page (two columns is OK) – Each problem should be below the previous (not next to it).

8. Check any answers that you can in the back of the book before turning it in. It is your responsibility to check your work and get help if and when you have questions.

7. Creating Your Own Personal CALCULUS REFERENCE BOOK

During the term, you will create your own personal Calculus Reference Book. If you have one from a previous class (such as Math 50A) and you wish to continue using that book for this class, it is fine as long as your book has a Title Page and a Table of Contents that corresponds with your contents.

In your Reference Book, you will write definitions, examples, and instructions of things that we learn in this class. This book will be useful to you throughout this course, and especially in other math and science courses you take!

You will be allowed to use your Reference Book on our "Reference Book Quizzes" as well as when you are studying and working on your homework, of course, and on part of the Final Exam.

- Get a bound notebook with grid paper in it (sometimes called "quad ruled"). Composition books are about $2 to $4 dollars and are sold at the CR and HSU bookstores, Staples, and other places. *IMPORTANT: Let me know if you cannot find one (apparently supplies are low in local stores).*

- Make a Title Page. The first page of the book (a right-side page) should be made into a title page. Create a title for your book, and include identifying information so it could be returned to you if lost/found.

- Start the Table of Contents. On the top of the **next** page (right side) write "Table of Contents" and reserve the next several pages for your Table of Contents to grow into. Skip at least 4 pages – more if your writing is large or if you anticipate entering particularly detailed information in your "T O C."

- Page 1. The first page that you write actual content information on should be numbered "1".

- Number the following pages. Number the pages, either odd and even on front and back, or you might prefer to number just the right-side pages 1, 2, 3, and so on, leaving the left sides blank at first.

- Enter information regularly as you study and do your homework. Keep just one basic topic on each page, even if you don't fill up every page. The important thing to remember is to make this useful for yourself, so that a year from now (for example), you will be able to find whatever you look for easily. (Write the page number of the corresponding information in the textbook, or cite the source of the information.)

- As you add information, write corresponding entries in the T O C, listing the number of the corresponding page ***in your reference book*** to the **right** of the T O C entry.

- What to write: At times, I will direct you to include specific information in your Reference Book. Also, as you study, go over your class notes and read corresponding material in the text, synthesize important information and put it into your Reference Book. Definitions and explanations in your own words will be easier for you to understand later. Include examples and pictures, too.

Your Reference Book will be graded several times during the term. Correctness will be spot-checked (due to lack of time – not for lack of interest!). The Reference Books are graded on three areas: completeness, general correctness, and presentation.

8. Sources of Math 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. Some sources of help are:

- **Courses you can sign up for to get academic support:**
    - **Math 52: Math Tutoring Lab** (strongly recommended but not required). Register for the 1-unit or ½-unit section for this opportunity for drop-in tutoring in the Math Lab during open hours. Math Lab is a class; register for it using WebAdvisor; it is Credit/No Credit. For 1 unit of "credit" you must have 45 hours of documented attendance by the end of the semester (22.5 hours for 1/2-unit). You can sign up for ½ -unit and change to 1-unit later if you choose to.
    - **Math 252: Non-credit alternate version of Math Tutoring Lab.** You get the same drop-in tutoring help as Math 15, with the same hours, but this is -0- units and there is no hours requirement.
    - **CIS 210**: A free drop-in class for help with computers, Canvas, email, Excel, and lots more!
    - **GUID classes**: Many GUID classes can be taken by any students (even if not in DSPS program)
    - **Math Review Courses: Math 301, Math 302, Math 303** – short, 9 hours of class time total
- **People**
    - **One-on-one Tutoring in ASC**: Any CR student can sign up to meet with a tutor, by appointment (in a variety of disciplines, not just mathematics). Sign up in the Academic Support Center (ASC).
    - **Tutors** available for students in special programs (for example DSPS, EOPS, TRiO)
    - **Private tutors**
    - **Classmates – form study groups**. You can contact classmates via discussion forums or email, from the Study Buddy List, or meet together in the Math Lab.
    - **Instructors** (me and others!): You can come to my office during office hours, or by appointment; you can call or email me to connect. Other instructors are always willing to help, too, when available.

9. Grading information (*subject to change with fair notice*)

NOTE: The "Gradebook" in Canvas is NOT your official grade and is for informational purposes only.

For the grade options at left, you must meet all the requirements in that row of the chart.

	Exams/Quizzes	Reference Book	In-class Work*	Homework Assignments**
For A-/A	At least 85% average	Excellent Reference Book, with all or most topics covered, with corresponding table of contents	At least 90% completed satisfactorily	• Do all Practice Problems • at least 90% of "Basic" problems completed in a legible, satisfactory way; • good work done on majority of "Advanced" problems
For B-/B/B+	At least 75% average	Good Reference Book, covering majority of course content with corresponding table of contents	At least 80% completed satisfactorily	• Do all Practice Problems • at least 80% of "Basic" problems completed in a legible, satisfactory way; • good work done on at least some "Advanced" problems
For C-/C/C+	At least 65% average	Basic Reference Book has basic topics covered	At least 70% completed satisfactorily	• Do 70% of Practice Problems • at least 70% of "Basic" problems completed in a legible, satisfactory way
For D	At least 50% average	Reference Book must have at least one page of content	At least 60% completed satisfactorily	• Do majority of Practice Problems • Majority of "Basic" problems completed in a legible, satisfactory way

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

*regarding in-class work, exceptions are allowed if make-up arrangements are made in advance
** Homework will include problems from the textbook, along with other handouts and assignments.

CAVEAT: The above procedures are subject to change.

10. TENTATIVE PLAN

Calculus: Early Transcendentals, 5th Edition, James Stewart - McMaster University
ISBN-10: 0534393217 ISBN-13: 9780534393212, 1320 Pages Casebound, Published © 2003

	Page	Unit 1	Unit 2	Unit 3	Unit 4
A Preview of Calculus	**2**	**1**			
5. INTEGRALS	**368**				
5.3 The Fundamental Theorem of Calculus	394	1			
5.4 Indefinite Integrals and the Net Change Theorem	405	1			
Writing Project: Newton, Leibniz and the Invention of Calculus	413				
5.5 The Substitution Rule	414	1			
5.6 The Logarithm Defined as an Integral	422	1			
Review	430				
Problems Plus	434				
6. APPLICATIONS OF INTEGRATION	**436**				
6.1 Areas between Curves	437	1			
6.2 Volume	444		2		
6.3 Volumes by Cylindrical Shells	455		2		
BOWLING PIN					
6.4 Work	460				4
6.5 Average Value of a Function	464				4
Applied Project: Where to Sit at the Movie	468				
Review	468				
Problems Plus	470				
7. TECHNIQUES OF INTEGRATION	**474**				
7.1 Integration by Parts	475		2		
7.2 Trigonometric Integrals	482	1			
7.3 Trigonometric Substitution	489		2		
7.4 Integration of Rational Functions by Partial Fractions	496	1			
7.5 Strategy for Integration	505			3	
7.6 Integration Using Tables and Computer Algebra Systems	511			3	
Discovery Project: Patterns in Integrals	517				4
7.7 Approximate Integration	518			3	
7.8 Improper Integrals	530		2		
Review	540				
Problems Plus	543				
8. FURTHER APPLICATIONS OF INTEGRATION	**546**				
8.1 Arc Length	547			3	
Discovery Project: Arc Length Contest	554				
8.2 Area of a Surface of Revolution	554			3	
Discovery Project: Rotating on a Slant	560				
8.3 Applications to Physics and Engineering	561				4
8.4 Applications to Economics and Biology	571				4
8.5 Probability	575				4
Review	582				
Problems Plus	584				

9. DIFFERENTIAL EQUATIONS		**586**				
9.1	Modeling with Differential Equations	587			3	
9.2	Direction Fields and Euler's Method	592			3	
9.3	Separable Equations	601			3	
Applied Project: How Fast Does a Tank Drain?		609				
Applied Project: Which is Faster, Going Up or Coming Down?		610				
9.4	Exponential Growth and Decay	611				4
Applied Project: Calculus and Baseball		622				
9.5	The Logistic Equation	623				4
9.6	Linear Equations	*32			3	
9.7	Predator-Prey Systems	638			3	
	Review	644				
Problems Plus		648				
10. PARAMETRIC EQUATIONS AND POLAR COORDINATES		**650**				
10.1	Curves Defined by Parametric Equations	651	1			
Laboratory Project: Families of Hypocycloids		659				
10.2	Calculus with Parametric Curves	660		2		
Laboratory Project: Bezier Curves		669				
10.3	Polar Coordinates	669	1			
10.4	Areas and Lengths in Polar Coordinates	679		2		
	Review	696				
Problems Plus		699				
11. INFINITE SEQUENCES AND SERIES		**700**				
11.1	Sequences	701	1			
Laboratory Project: Logistic Sequences		713				
11.2	Series	713	1			
11.3	The Integral Test and Estimates of Sums	723		2		
11.4	The Comparison Tests	730		2		
11.5	Alternating Series	735		2		
11.6	Absolute Convergence and the Ratio and Root Tests	740			3	
11.7	Strategy for Testing Series	747			3	
11.8	Power Series	749			3	
11.9	Representation of Functions as Power Series	754				4
11.10	Taylor and Maclaurin Series	760				4
Laboratory Project: An Elusive Limit		772				
11.11	The Binomial Series	772				4
Writing Project: How Newton Discovered the Binomial Series		776				
11.12	Applications of Taylor Polynomials	776				
Applied Project: Radiation from the Stars		785				
	Review	786				
Problems Plus		789				
Shaded	indicates might not be covered this semester					

CAVEAT: The above procedures are subject to change.