Math-151, Calculus II, Spring 2019

Ricardo Carretero, Office Hrs: MW 12-1@ GMCS-577, Email: rcarretero@sdsu.edu

Corey Manchester, Office Hrs: TTh 11:00-12:15@ GMCS-510, Email: coreymanchester@hotmail.com

Renee Thompson, OHs: TTh 11:30-12:20 @ GMCS-592 + TTh 3:45-5:00 @ MLC, rthompson@sdsu.edu

Preferred office Hrs: Please consult the MLC tutoring at: http://mlc.sdsu.edu/

Text: Calculus-Single Variable Calculus Early Transcendentals, 8E, by James Stewart. If you opt-out for Immediate Access (see next point), you can buy hardcopy, paperback or electronic copy. If you bought the life-time edition (when you took calc-I or if you are repeating calc-II) you will not need to pay again.

Immediate Access Course: All of the course materials for this class are provided in a digital format by the first day of classes and are free through the add/drop date. Your SDSU student account will then be charged a special reduced price for use of the materials for the remainder of the semester unless you opt-out of the content by 11:59 PM on the add/drop date. Please visit www.shopaztecs.com/immediateaccess for additional information about Immediate Access pricing, digital subscription duration, print add-ons, opting out and other frequently asked questions.

Online Homework: All book versions [hardcopy, paperback, electronic] (California Ed.) include a WebAssign access code. To register into your WebAssign course just click the "WebAssign" tab in your Math-151 in BlackBoard. WebAssign will let you know when an answer is correct or incorrect, so read the online WebAssign information that comes with your textbook.

Website: The homework ('Assignments' tab) and other materials will be posted in the course webpage: http://carretero.sdsu.edu/teaching/M-151/

Math Learning Center (MLC), Love Library 338: The goal of this center is to provide a central location for students from all lower division mathematics and statistics courses to find free, on-demand, tutoring. We encourage students who have any questions about their work to drop in for one-on-one, group, or class-based workshop instruction with tutors who know the topics, the instructors, the online homework systems, and the best ways to study. Hours of operation are: M-Th 9am-6pm, Friday 9am-3pm, and Sundays 2pm-5pm. Consult the full MLC schedule at http://mlc.sdsu.edu/. Use the MLC website to find out when your TA (or any particular TA) is working if you want to get specific help. The best time to get the most relaxed personal help is the morning, any time before noon. I encourage very strongly that you make regular visits to the MLC. We have collected some data from previous semester that indicates a very good correlation between better grades and constant MLC visit. In fact:

- 79% of students that did not pass did not go to MLC.
- 95% of students that did not pass did not go or went only once during the semester to MLC.
- a larger percentage (43%) of high passers [B+ or better] attended MLC at least once than low passers (34%) or non-passers (21%)
- a larger percentage of high passers (12%) attended five or more times than did low (7%) or non-passers (2%)

Supplemental Instruction (SI)

Supplemental Instruction (SI) study sessions are offered for this course and are offered a dozen times per week throughout the semester. Sessions are led by a SI Leader who has already mastered the course material and has been trained to facilitate group sessions where students can meet to improve their understanding of course material, review and discuss important concepts, develop study strategies and prepare for exams. SI is for everyone, and open to all students enrolled in this class; not just those students who are struggling. Attendance is not reported to your faculty member, and only tracked to measure how the program impacts student performance in the class. Attendance at SI Sessions is free and voluntary. Students who attend SI Sessions weekly typically earn higher final course and exam grades than students who do not participate in SI. Check out the SI button on Blackboard for dates, times, and SI Session locations.
Prerequisite: Math 150 with a minimum grade of C. Remark: If you took AP Calculus and scored below the “4” level, you need take Math 150.

Calculators: No calculators will be allowed on the Exams (quizzes/midterms/final).

Grading:
- Weekly Pop Quizzes: 10% [Closely related to Homework and ideas in text]
- Activity reports: 10%
- Homework: 20%
- Three Midterms: 30% [No make-ups! See below]
- Final: 30%

Homeworks: The homework grade will be split in two parts. Part 1 (50%): the grade you score in WebAssign. Part 2 (50%): you need to turn in a handwritten version of all your work of the lecture with all the details at how you arrived at the answers you inputed in WebAssign. No late homework accepted: hand it in at the BEGINNING or END of the lecture but NEVER in the middle of the lecture! Make sure that you include your name + section# + HW# + redID. Failure to include any of this will automatically result in a zero!

Quizzes: Quizzes can show up during lecture, recitation or activity sessions. Your score on the weekly Quizzes will reflect your understanding of the Homework, which also includes ideas and concepts from the reading assignments, and may often reflect your understanding of ideas discussed in class.

Attendance: Attendance to all lectures is required. Attendance will be recorded using iClicker/Reef (see next point). If you miss 6 (or more) lectures, your grade will be reduced by one full letter grade. Attendance is crucial! In fact, statistics from last semesters (see plot to the right) suggest a very strong correlation between low performance and number of absences. In fact, all failing students missed more than 6 lectures and all but a couple of students attending all lectures passed the class (often with the highest scores). We will often expand upon the ideas discussed in the book and some of the ideas and problems from the lectures may appear on the Exams and Quizzes. There will be no make-ups of Quizzes. Lateness or leaving class early is unacceptable. If lateness becomes a common problem, the instructor reserves the right to lock the doors.

Clicker/Reef: You will need to get an iClicker and/or register to Reef. This technology will be used for attendance and for short quizzes. Information/help/FAQs on iClicker/Reef can be found at: http://clicker.sdsu.edu/. Please get your iClicker and/or Reef (any one of the two options will be allowed) and register it with the class as soon as possible.

Use of electronic devices: Cell phones, laptops, tablets, etc. can only be used during iClicker questions. At any other times, these devices have to be switched off and stored away. Usage of these devices outside of iClicker questions will result on the device being confiscated and in disciplinary action.

Course Grade: Your final letter grade will be assigned by your overall percentage score (HW, quizzes, midterms, and final exam) as follows: (A-,A): 90+%, (B-,B,B+): 80+%, (C-,C,C+): 70+%, (D-,D,D+): 60+%.

Make-up exams: There are NO make-up exams. Test dates for ALL exams are set from the beginning the semester (Mon, Feb. 11: Midterm#1, 7:00-9:00pm; Mon, Mar. 11: Midterm#2, 7:00-9:00pm; Mon, Apr. 15: Midterm#3, 7:00-9:00pm; Sun, May. 12: FINAL 2:30-4:30pm). It is your responsibility to be present during tests, so please do not make any doctor’s appointments, travel plans, etc, on these dates. You will only be able to make-up if you miss an exam due to a severe medical emergency (not a routine doctor appointment), and you present verifiable documentation (i.e., within THREE days of incident: letter from your doctor with address and phone numbers).
Chapters/topics: We will cover Chapters 3.11, 6, 7, 8, 9, 11, and 10. You will only be responsible for the Sections of the Text where reading or problems have been assigned in the Homeworks.

Topics:

1. **Applications of the Integral**: Areas between curves, Volumes by slices and cylindrical shells, arc length, area of a surface of revolution, hyperbolic and inverse hyperbolic functions
2. **Techniques of Integration**: Integration by parts, trigonometric integrals and trig substitutions (or trigonometric and hyperbolic integrals and substitutions as determined by the individual instructor), integration of rational functions, improper integrals
3. **Differential Equations**: Exponential growth/decay, models of population growth, and other applications, separable equations, linear equations.
4. **Infinite Series**: Sequences, series, tests for convergence, power series, Taylor polynomials
5. **Polar and Parametric Coordinates**: Curves and calculus for parametric and polar equations. Conic sections in polar coordinates.

Student Learning Outcomes: Calculus provides the mathematical basis for many courses in sciences and engineering. Understanding of integration is critical for learning how to solve mathematical differential equations that arise in climate models, seismology, astronomy, bridge and dam construction, etc. Understanding of power series is critical for understanding the behavior of many functions. By the end of the course with the topics given above, students should be able to:

1. solve integrals analytically using a variety of techniques including integration by parts, function substitutions, partial fractions, etc.
2. calculate arc length, areas and volumes in different coordinate systems (e.g., Cartesian and/or Polar coordinate systems) using the integration methods;
3. solve simple differential equations using integration methods and understand the characteristics of the solutions (e.g., exponential growth or decay; linear and nonlinear responses);
4. understand the definition of Taylor and Maclaurin power series and their convergence and divergence; perform different tests (e.g., the Integral Test, the Limit Comparison Test, the Ratio Test) to examine the absolute or conditional convergence (or divergence) of the power series; and represent functions using Taylor and Maclaurin power series.

Personal Conflicts: No special arrangements will be made for personal conflicts such as: (a) Family related issues (weddings, visiting relatives, etc.), (b) Work conflicts: schedule, traveling, traffic, etc., (c) Vacations planned during regular class meetings, etc... Special arrangements can be made, however, only in the most compelling and verifiable circumstances such as disabilities/illness. Midterm and final dates and times are posted from the beginning of the semester so please plan accordingly.

Students with Disabilities: If you are a student with a disability and believe you will need accommodations for this class it is your responsibility to contact Student Disability Services at (619) 594-6473. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability Services.

No Extra Credit: Please do not ask for extra credit work. Study diligently throughout the semester so that you will get a good grade in the course. Study diligently and do not “cram” for exams and quizzes.

Cheating, Academic Integrity/honesty: There will be absolute zero tolerance towards cheating. All work that you complete in this class (when in the classroom our outside of the classroom) should be your own and only your own. This apply to ALL assignment types: homeworks, quizzes, lab reports, midterms, final, etc... (See below about working in groups.) Any (yes any) form of cheating will automatically result in an “F” for the whole course and direct disciplinary action with the Center for Students Rights and Responsibilities (which may include punitive sanctions such as probation, suspension, or even, expulsion). Note that helping a fellow student during an exam is cheating (both students involved will be given an “F”). Using any electronic device during exams or quizzes is cheating. Please leave all electronics in your bag far away from your reach. Any electronic device (including phones, smart watches, earphones, google glasses, tablets,
etc.) in sight will be considered as cheating (even if it is not turned on!). This statement is a reminder to uphold your obligation as a student at SDSU and to be honest in all work submitted and exams taken in this class and all others. If others cheat you are at a disadvantage; thus, if you see any form of cheating, please report it to the instructor as soon as you feel comfortable in doing so.

**Working in groups:** You are allowed (and encouraged) to work in groups on the homework and labs, however your answers have to be developed by **YOU** and **NOT** copied from anyone else. If you work on a lab or homework with a partner make sure that your write your OWN independent solutions. Working with others means working on **understanding** how to solve a problem and not giving the solutions to another person! If we see any form of copying it will be treated as **cheating (see previous point)**.

**Posting course materials:** Do **NOT** send or post online any course material (homeworks, quizzes, midterms) without the prior consent of instructor. Doing so will be treated as cheating and strict disciplinary action will be taken.

**Addenda:** The instructor reserves the right to make modifications to the syllabus. Any addendum will be announced in class (you are responsible for attending class during such announcements).

**Final Notes/Recommendations:**

**Student effort.** Research has shown that studying 2-3 hrs per week per unit (ie 8-12 hrs per week) is key for success. Just doing homework does not mean you are “done”.

**Rapid Pace Note:** This is a very fast paced course. Do not get behind! Learn the ideas presented in class before the next lecture where you will surely deal with even more ideas! This course will likely run much more rapidly than your High School Calculus Course!!

**Student Responsibility:** Read the textbook assignments thoroughly. Study all examples, diagrams, graphs, and comments in the margins. If you do not understand a “step” in a worked example or proof, do not blame the book. Take it as feedback that you may need to spend time reviewing ideas in a calculus or in a precalculus book (try the internet). Please visit your professor or TA promptly when you need help.

**Participation:** Participation in class is encouraged. If you have a question, ask it! If you do not understand something, say so! Any question that will help you to better understand the material is welcome! Because of this, I expect you to be patient and respectful of others who ask questions in an effort to do well.

**Strive to understand ideas and concepts,** and not just memorize formulas. Ideas and concepts are definitions, strategies in solving problems, strategies in proving theorems, etc. For example, memorizing a formula and using it correctly in problems does not mean you understand where the formula comes from. You should be able to evaluate \( \sin(\frac{7\pi}{6}) \) or \( \sin(\frac{14\pi}{3}) \) quickly without having memorized the answers; this requires understanding the definition of the sine function on the unit circle and practice!

**How do you know you understand an idea?** Ask yourself questions! i.e., Can you write down a definition and explain it to a friend? Can you explain to a friend the ideas behind a theorem without just memorizing individual steps in its proof? Can you apply algebra and trig tricks in simplifying expressions without having to continually look up sample problems and copy ideas? You will understand the solution to a problem when you get the feeling that all the “steps” are integrated in your mind into the “whole picture.” If you feel flustered with several “steps” in the solution of a problem, then it will be difficult to solve a similar problem on an exam. You should not feel like you are memorizing steps or going through isolated steps when you understand a problem!

**Final words:** It is **YOUR RESPONSIBILITY** to get the grade you desire. There is no point in sending emails at the end of the semester pleading your case or asking what you can do to raise your grade. In your college career, you will have some bad instructors, some bad textbooks, some policies you don’t agree with, some exam questions you don’t like, etc. Do not use these obstacles as a crutch or an excuse to be a victim. Your future is in **YOUR hands**. If you have a bad instructor/book/policy/exam, accept it, and fight harder to get what you want. You belong here, we want you here, and we want you to succeed! We’ll meet you where you are, but from there, it’s up to BOTH of us to get you where you need to be.