Analytic Geometry and Calculus I
Math 180
Section 3504 (5.0 Units)
Classroom 36 - 325

Office Number: Room 31-382
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Office Hours:
Monday and Wednesday: 1:30 p.m. – 2:30 p.m.
Tuesday and Thursday: 1:00 p.m. – 2:00 p.m. and 5:00 – 5:30 p.m.

Meeting Days/Dates/Times:
Tuesdays and Thursdays 2:00 p.m. - 4:20 p.m.
August 18 – December 11, (sixteen weeks + finals)
Final exam: Thursday, December 11, 1:45 – 3:45 p.m.

Course Prerequisite:
A grade of "C" or higher in Math 170 and Math 175 or Math 176 or equivalent.

Course Content:
Limits and continuity of functions, differential and integral calculus with applications
involving algebraic, exponential, logarithmic, trigonometric and hyperbolic functions.

Student Learning Outcomes:
- A student will be able to define and apply the concepts of limits, continuity, derivatives and anti-derivatives to solve a variety of problems.
- A student will be able to demonstrate understanding of the geometric relationship between a function, its first and second derivatives and its anti-derivatives.
- A student will be able to interpret and analyze information to develop strategies for solving problems involving related rates, optimization, work, volumes, arc length, and surface area.
- A student will be able to communicate the mathematical process and assess the validity of the solution.

Required Materials:
Text: *Stewart, James*, Calculus early transcendentals, 7th edition , ISBN 9780538498678
Webassign class code for access to e-book: gcccd 6430 0201

A graphing calculator is highly recommended. I will use a TI-83/84 graphing calculator
regularly in class. However, you will be expected to calculate derivatives/integrals
without the aid of a calculator and calculators may not be allowed on certain exams.

Grading:
Grades will be earned based on a standard scale:
A+: 100 – 97, A: 96 – 94, A-: 93 – 90, B+: 89 – 87, B: 86 – 84, B-: 83 – 80,
C+: 79 – 77, C: 76 – 74, C-: 73 – 70, D+: 69 – 67, D: 66 – 64, D-: 63 – 60, F: Below 60

Assignments:
Grades will be based on the following assignments:
Homework 20%, Exams 60%, Cumulative Final Exam 20%

Class Policies:
You are allowed to miss a total of five hours of class time. After that, you may be dropped from the course. I do not recommend missing <u>any</u> class time.

There are no make-up quizzes or exams. If you know in advance that you will <u>miss an exam</u>, please call me before the exam to see if other arrangements can be made.

Homework should be completed regularly. Homework will be due on the test day for the sections being tested. I will not accept late homework.

Respect for the teaching/learning process is expected from every person in this class. Some examples of this are:
- Do your assignments on time so you can discuss the work in class.
- All cell phones are turned off.
- No talking to neighbors unless requested by the instructor.
- Be in class on time with all necessary materials ready to go.

Academic Integrity:
Cheating and plagiarism (using as one's own ideas, writings or materials of someone else without acknowledgement or permission) can result in any one of a variety of sanctions. Such penalties may range from an adjusted grade on the particular exam, paper, project, or assignment to a failing grade in the course. The instructor may also summarily suspend the student for the class meeting when the infraction occurs, as well as the following class meeting. For further clarification and information on these issues, please consult with your instructor or contact the office of the Assistant Dean of Student Affairs.

Accommodations for Students with Disabilities:
Students with disabilities who may need accommodations in this class are encouraged to notify the instructor and contact Disabled Student Services & Programs (DSP&S) early in the semester so that reasonable accommodations may be implemented as soon as possible. Students may contact DSP&S in person in room 110 or by phone at (619) 644-7112 (voice) or (619) 644-7119 (TTY for deaf).

Supervised Tutoring Referral
Students are referred to enroll in the following supervised tutoring courses if the service indicated will assist them in achieving or reinforcing the learning objectives of this course:

*IDS 198, Supervised Tutoring to receive tutoring in general computer applications in the Tech Mall;
*English 198W, Supervised Tutoring for assistance in the English Writing Center (Room 70-119); and/or
*IDS 198T, Supervised Tutoring to receive one-on-one tutoring in academic subjects in the Tutoring Center (Room 70-229, 644-7387).

To add any of these courses, students may obtain Add Codes at the Information/Registration Desk in the Tech Mall.

All Supervised Tutoring courses are non-credit/non-fee. However, when a student registers for a supervised tutoring course, and has no other classes, the student will be charged the usual health fee.

Some comments on your homework assignments:
This course will prove to be very challenging to most of you. To succeed you must work hard and keep up with the class. My suggestion is that you consider your entire academic schedule before committing to this class. Do not take too many units or too many other challenging classes along with this one.

I recommend reading your text even though many of you will find this to be challenging. Next year at the university, your professor will just assume that you are reading their texts, many of which will be very difficult to read. Since you are all engineers, physicists, mathematicians, etc., making a concerted effort to read your text now will prepare you for the challenging texts you will study in the future.

I have specifically assigned problems that have solutions in the back of the text for you to be able to check your work. I would do as many of these as you can. The more problems you try to do, the more experience you will get and the more success will come. I also recommend reading over the discussion problems at the end of each section even if you do not understand all of them. **Do your homework regularly and keep pace with the class.**

Tentative Schedule Math 180

Week	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1 8/18 – 8/22		2.1 and 2.2		2.3 and 2.4	
Week 2 8/25 – 8/29		2.4 and 2.5		2.6 and 2.7	Last day to drop w/o "W"
Week 3 9/1 – 9/5	Holiday Labor Day	2.8 and 3.1		Exam One	
Week 4 9/8 – 9/12		3.2 and 3.3		3.3 and 3.4	
Week 5 9/15 – 9/19		3.4 and 3.5		3.5 and 3.6	Last day to apply "P/NP"
Week 6 9/22 – 9/26		3.6 and 3.7		Exam Two	
Week 7 9/29 – 10/3		3.7 and 3.9		3.9 and 3.10	
Week 8 10/6 – 10/10		3.10 and 4.1		4.2 and 4.3	
Week 9 10/13 – 10/17		4.3 and 4.4		Exam Three	
Week 10 10/20 – 10/24		4.4 and 4.5		4.5 and 4.7	
Week 11 10/27 – 10/31		4.7 and 4.9		4.9 and 5.1	
Week 12 11/3 – 11/7		5.2 and 5.3		Exam Four	Last day to drop
Week 13 11/10 – 11/14		Holiday Veteran's Day		5.3 and 5.4	
Week 14 11/17 – 11/21		5.4 and 5.5		5.5 and 6.1	
Week 15 11/24 – 11/28		Exam Five		Holiday Thanksgiving	Holiday Thanksgiving
Week 16 12/1 – 12/5		6.2 and 6.3		6.3 and 6.5	

Final Exam is Thursday, December 11, 1:45 p.m. – 3:45 p.m.

Homework assignments:
Chapter Two: Limits and Derivatives
2.1 Tangent and Velocity Problems (1 - 5 odd)
2.2 The Limit of a Function (1 – 37 odd)
2.3 Calculate Limits using the Limit Laws (1 – 31 odd, 41, 49, 54)
2.4 The Precise Definition of a Limit (1 – 21 odd)
2.5 Continuity (1 – 43 odd)
2.6 Limits at Infinity: Horizontal Asymptotes (1 – 43 odd)
2.7 Derivatives and Rates of Change (1 – 37 odd, 41, 43)
2.8 The Derivative as a Function (1 – 31 odd, 43, 50)
Chapter Three: Differentiation Rules
3.1 Derivatives of Polynomials and Exponential Functions (1 – 35 odd, 49, 51)
3.2 The Product and Quotient Rules (1 – 33 odd, 43 – 51 odd)
3.3 Derivatives of Trigonometric Functions (1 – 23 odd, 29 – 33 odd, 39, 41, 51)
3.4 The Chain Rule (1 – 53 odd, 61, 65)
3.5 Implicit Differentiation (1 – 29 odd)
3.6 Derivatives of Logarithmic Functions (1 – 45 odd)
3.7 Rates of Change in the Natural and Social Sciences (1 – 17 odd)
3.9 Related Rates (1 – 25 odd)
3.10 Linear Approximations and Differentials (1 – 31 odd)
Chapter Four: Applications of Differentiation
4.1 Maximum and Minimum Values (1 – 59 odd)
4.2 The Mean Value Theorem (1 – 17 odd)
4.3 How Derivatives Affect the Shape of a Graph (1 – 43 odd)
4.4 Indeterminate Forms and L'Hospital's Rule (1 – 61 odd)
4.5 Summary of Curve Sketching (1 – 51 over other odd)
4.7 Optimization Problems (1 – 35 odd)
4.9 Anti-derivatives (1 – 51 odd)
Chapter Five: Integrals
5.1 Areas and Distances (1 – 15 odd)
5.2 The Definite Integral (1 – 5 odd, 21 – 27 odd, 33 – 39 odd, 51)
5.3 The Fundamental Theorem of Calculus (1 – 39 odd, 67)
5.4 Indefinite Integrals and the Net Change Theorem (5 – 43 odd, 51 – 57 odd)
5.5 The Substitution Rule (1 – 69 odd)
Chapter Six: Applications of Integration
6.1 Areas Between Curves (1 – 27odd, 47)
6.2 Volumes (1 – 17 odd)
6.3 Volumes by Cylindrical Shells (1 – 19 odd)
6.5 Average Value of a Function (1 – 11 odd, 15)
Chapter Eight: Further Applications of Integration
8.1 Arc Length (Handout)
8.2 Area of a Surface of Revolution (Handout)