MATH 250-01

CALCULUS I: website: www.swccd.edu/~sgracey

Meets: Monday-Thursday **Time:** 10:45-12:50 **Room: 852**

INSTRUCTOR CONTACT INFORMATION AND OFFICE HOURS

Instructor: Shannon Gracey **Phone:** 619-421-6700 ext. 5517 **e-mail:** sgracey@swccd.edu
Office: Room **320D**, appointment only--you may make an appointment by calling or e-mailing me, using the contact info written above.

COURSE MATERIALS

Text: *Calculus, 8th ed.,* Larson, Hostetler, and Edwards
Calculator: A graphing calculator is REQUIRED. TI 84 is recommended.

PREREQUISITES AND RECOMMENDED PREPARATION

Prerequisite: MATH 244 or **both** MATH 101 AND MATH 104; or the equivalent skill level as determined by the Southwestern College Mathematics Assessment or equivalent

Recommended Preparation: RDG 56 or the equivalent skill level as determined by the Southwestern College Reading Assessment or equivalent

QUESTIONS

Questions are an important part of the learning process. If you have a question, please feel free to ask me at any time! If you have a question, there are probably at least 5 other students with the same question. If I cannot answer your question immediately, I will come back to it ASAP.

HOMEWORK

- Homework will be collected on exam and quiz days at the beginning of the class.
- Homework is graded on completeness.
- Each new assignment must be started on a new paper, be clearly labeled with the chapter, section, and assignment, and stapled.
- In order to be successful in this course, YOU MUST PRACTICE MATH PROBLEMS!!!
- **No late homework will be accepted**.

QUIZZES & EXAMS

- There will be at least 5 quizzes. No quizzes will be dropped, however your lowest quiz score may be replaced by your attendance percentage.
- There will be 5 exams. No exams are dropped, however your lowest exam score may be replaced by your earned homework percentage.
- Many of the exams and quizzes will **NOT** allow the use of a calculator. Be sure to know the unit circle and be able to work with fractions.

ATTENDANCE & TARDIES

Each student is responsible for his/her registration in classes. Each student must attend the first class meeting or make arrangements with the instructor if he/she is going to be absent. Failure to attend the first class meeting or excessive unexcused absences, that is, more than 10 hours of missed class time, may result in a student being dropped from this class. Each class you will be given 2 points if you arrive on time and stay for the entire class, 1 point if you arrive late or leave early and 0 points if you are absent. At the end of the semester this percentage {(earned points)/ (points possible)} x100 will replace your lowest quiz percentage.

DISABILITY SUPPORT SERVICES (DSS)

DSS provides programs and services for students with disabilities. Southwestern College recommends that students with disabilities discuss academic accommodations with their professors during the first two weeks of class. This syllabus and course handouts are available in alternate media upon request.

TUTORING AND ACADEMIC SUCCESS CENTER REFERRAL

To further your success, reinforce concepts, and achieve the stated learning objectives for this course, I refer you to Academic Success Center learning assistance services. You will be automatically enrolled in NC 3: Supervised Tutoring, a free noncredit course that does not appear on your transcripts. Services are located in the ASC (420), the Writing Center (420D), the Reading Center (420), Math Center (426), the Library/LRC Interdisciplinary Tutoring Lab, MESA (396), specialized on-campus School tutoring labs, the Higher Education Center, and the San Ysidro Education Center. Online learning materials and Online Writing Lab (OWL) are available at www.swccd.edu/~asc.

BEHAVIOR

- **CHEATING ON ANY TEST OR QUIZ WILL EARN A GRADE OF F!!! PLAGIARISM (COPYING) OF OTHER PEOPLE'S WORK IS NOT ACCEPTABLE. Any person caught doing this will get an F on the assignment or test in question and can also potentially be given a grade of F for the course and/or be referred to the college discipline process.**
- You may not use your cell phone during class at any time. If you are caught texting, I will hold your phone until the break or the end of class.
- During class your cell phone/pager should be off.
- If you know you need to leave class early, or if you arrive late, take a seat near the door.
- **RESPECT YOUR FELLOW STUDENTS AT ALL TIMES!!!**

GRADING

Exams (5—MAKE-UPS ARE GRANTED ONLY IF I AM NOTIFIED BEFORE THE EXAM) **55%**
Quizzes (MAKE-UPS ARE GRANTED ONLY IF I AM NOTIFIED BEFORE THE EXAM)..... **20%**
HOMEWORK (NO LATE ASSIGNMENTS ACCEPTED).....**5%**
Final (CUMULATIVE).....**20%**
A: 90%—100% B: 80%— 89% C: 70%— 79% D: 60%— 69% F: 59% and below
Final grades are left to the discretion of the instructor.

STUDENT LEARNING OUTCOMES

Upon successful completion of Math 250, the student should be able to:

1. State and apply basic definitions, properties, and theorems of first semester Calculus.
2. Model and solve problems using derivatives of algebraic and transcendental functions.
3. Analyze and sketch graphs using the principles of calculus.
4. Evaluate limits, derivatives, definite and indefinite integrals graphically, algebraically, and/or using the formal definitions.

STUDENT LEARNING OBJECTIVES

1. Student will review the concepts of absolute value inequalities, functions, combinations of functions and composite functions.
2. Student will evaluate limits using the limit theorems, the definition, and demonstrate the concept of continuity.
3. Student will find the derivative (first and higher order) using rules, theorems and definition. Interpret as slope, rate of change, velocity, and acceleration.
4. Student will learn and demonstrate techniques of approximation, and the differential.
5. Student will apply the derivative to curve sketching, maxima-minima problems, and related rate problems.
6. Student will learn and apply Rolle's Theorem and the mean value theorem.
7. Student will learn and demonstrate techniques for evaluating the integral using definition, rules, theorems and by approximation.
8. Student will apply the definite integral to find area, volumes of solids of revolution, and average values.
9. Student will learn and demonstrate techniques for differentiating exponential, logarithmic and trigonometric functions.
10. Student will learn and demonstrate techniques for evaluating integrals involving, exponential, logarithmic and trigonometric functions, and functions.

*As a final note: To be successful in this course, it is recommended that you spend 2 hours outside of class for every hour in class.

Chapter 1: Limits and Their Properties

1.1 A Preview of Calculus
1.2 Finding Limits Graphically and Numerically
1.3 Evaluating Limits Analytically
1.4 Continuity and One-Sided Limits
1.5 Infinite Limits

Chapter 2: Differentiation

2.1 The Derivative and the Tangent Line Problem
2.2 Basic Differentiation Rules and Rates of Change
2.3 The Product and Quotient Rules and Higher-Order Derivatives
2.4 The Chain Rule
2.5 Implicit Differentiation
2.6 Related Rates

Chapter 3: Applications of Differentiation

3.1 Extrema on an Interval
3.2 Rolle's Theorem and the Mean Value Theorem
3.3 Increasing and Decreasing Functions and the First Derivative Test
3.4 Concavity and the Second Derivative Test
3.5 Limits at Infinity
3.6 A Summary of Curve Sketching
3.7 Optimization Problems
3.8 Newton's Method
3.9 Differentials

Chapter 4: Integration

4.1 Antiderivatives and Indefinite Integration
4.2 Area
4.3 Riemann Sums and Definite Integrals
4.4 The Fundamental Theorem of Calculus
4.5 Integration by Substitution
4.6 Numerical Integration

Chapter 5: Logarithmic, Exponential, and Other Transcendental Functions

5.1 The Natural Logarithmic Function: Differentiation
5.2 The Natural Logarithmic Function: Integration
5.3 Inverse Functions
5.4 Exponential Functions: Differentiation and Integration
5.5 Bases Other than e and Applications

Chapter 6: Differential Equations

6.1 Slope Fields & Euler's Method
6.2 Differential Equations: Growth and Decay
6.3 Separation of Variables & the Logistic Equation

Chapter 7: Applications of Integration

7.1 Area of a Region Between Two Curve

Please return this page to Ms. Gracey on the second day of class. Be sure to print your name clearly so that I can give you credit.

I, _____, have read the course syllabus. I understand that I am required to follow the policies outlined in the syllabus. I understand that this course will require approximately 20 hours of productive study time **outside of class** in order for me to have a chance of successfully completing this course. I understand that I must complete the homework in order for me to have a chance of successfully completing this course. I understand that I must print out the course worksheets and bring them to class each time we meet. If I am unable to print the worksheets, I will make other arrangements with Ms. Gracey. Finally, I understand that my grade is **my responsibility** and I will make sure that I manage my time so that I can be successful in the class and in my life!

_____ _____

Signature Date