

Reedley College

Fall 2010

Course: Math 5A - Math Analysis I - 5 units
Schedule #: 56339

Location: FEM 4E
Time: 12:00 to 12:50 **Days:** M T W Th F

Instruction : August 16 to December 17

Final Exam : Monday May 13, 12:00 to 1:50

End of semester: Friday, December 17

Instructor: Marv Watts
Office: Building FEM room 4A
Office Hours: **Monday** 1:00 to 1:50, **Tuesday** 1:00 to 1:50, **Thursday** 1:00 - 1:50

Phone: 559 638-3641 ext. 3279
Email: rexlex@verizon.net

Text Books: Calculus Early transcendental 9rd Edition
by Anton / Bivens / Davis
Wiley & Sons Publishing

Course Description: Math 5A is a first semester course in calculus. The course covers fundamental laws, coordinate geometry, functions, limits, derivatives and applications, integrals and applications, exponential and logarithmic functions.

Prerequisite: Prerequisites will be rigorously enforced Math 4A (trigonometry) and Math 4B (Pre-Calculus) with a grade of "C" or better in each class

Drop Policy: Students with 8 or more absences may be dropped from class! Every 2 tardies will count as 1 absence. It is the student's responsibility to recognize when dropping a course becomes necessary.

Drop Deadline: - **Friday October 15** The drop deadline will be at the end of the ninth week. After that date, the student must be given a letter grade.

Attendance: You are expected to attend **all** class meeting and **be on time**. If you arrive late, it is your responsibility to inform the instructor after class so your absence will be changed to a tardy. Regular attendance and completion of assignments are imperative for success. Please be on time to class. It is distracting, rude and unfair to fellow classmates when a student is late. **Students leaving class before the end of class will be counted as being absent!**

Calculators: Calculators **are essential** but in general exams and final will be based on the student's ability to work problems **without** the aid of a calculator. If calculators are allowed on tests, there will be no sharing of calculators.

Cell Phones: Turn off cell phones before entering class! Do not use your cell phone as a calculator.

Homework: Homework **must** be written **clearly** and **neatly** on **one side** of standard size paper 8 1/2" x 11" (**no spiral or frayed paper please**). Pages should be **stapled** in the upper left-hand corner, and in order. Homework should be written with pencil - **don't use ink!** Write down the homework problem and

show all steps and calculations. **No work - No credit**, unless answer is obvious. Record the class name (Math 5B), your name, homework (**Chapter and section**), and date on the back of each homework assignment (see example below). Each homework assignment will be worth 0 to 10 points. When collected problem assignments will be spot checked. Not all assignments will be collected. Homework will be assigned at the end of each class and usually due at the beginning of the next class meeting. Late homework (no more than one day) will receive 5 points at most. Homework grades will be averaged at the end of the semester and a final homework grade from 0 to 100 will be assigned. Remember - your homework will also be graded on **completeness** and **neatness**. If you are absent an assignment may be mailed for full credit if postmarked the same day class meets or before.

Mail to: Reedley College
 995 N. Reed
 Attn. Marv Watts
 Reedley, Ca 93654

Example homework:
 Math 5A
 your name
 Chapter 3 Sec 4
 date

Examination Procedures: About Six exams ,a final, homework & class participation, will determine your grade. The final will be comprehensive and must be taken; final will usually count as two exams. Class participation will consist of student board work, short quizzes, and oral participation. There will be **no make-up exams** (see attendance policy) ! The exams will consist of problems similar to homework problems. Each exam is worth 100 points, homework & class participation is worth 100 points, and the final is usually 200 points. Partial credit will be given on exams and final. Exams and final will generally be closed book. **Students who are absent for the final may be assigned an F.**

Grading: The following is the **grading scale:**
 for course work:

Tentative credit

100 to 88 A
 87 to 77 B
 76 to 67 C
 66 to 58 D
 Below 58 F

Exams 600 points
 Final 200 points
 Class Participation & Homework 100 points

Students whose average grade is 87, 76, and 66, may be assigned the next higher grade if they have good attendance (absent not more than 4 times) and have taken an active roll in class (class participation).

Special Needs Requests: If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text , etc.) per Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

Academic Dishonesty: Academic dishonesty in any form is a very serious offense and will incur serious consequences.

We will not meet for class on the following dates:

Monday, September 6
 Thursday, November 11
 Thursday & Friday, November 25 – 26

Labor Day Holiday
 Veterans Day Holiday
 Thanksgiving Holiday

Course ID: MATH 5A

Course Title: Math Analysis I

Course Outcomes /Objectives:

List major objectives in terms of the observable knowledge and/or skills to be attained as a result of completing this course.

1. The student will be able to analyze and sketch the graphs of simple functions.
2. The student will be able to determine the domain and range of compound and composite functions.
3. The student will be able to calculate limits and determine the continuity of functions.
4. The student will be able to differentiate polynomial, trig, rational, exponential, and logarithmic functions.
5. The student will understand the definition of the derivative.
6. The student will be able to solve related rates and extrema problems using the derivative.
7. The student will understand The Fundamental Theorem of Calculus.
8. The student will be able to perform indefinite and definite integration including the use of substitution.
9. The student will gain proficiency in the use of Mathematica software as an analysis tool.

Course Outline:

- A. Functions
 1. Algebra and trigonometry review
 1. Functions and the analysis of graphs
 2. Properties of functions
 3. Compound functions and composite functions
 4. Applications of linear functions
1. Limits and Continuity
 1. Intro to limits (intuitive)
 2. Computational techniques
 3. Theory of limits
 4. Continuity
 5. Squeezing theorem and limits involving trig functions
1. Derivatives
 1. Secant lines, tangent lines, rate of change
 2. The definition of the derivative
 3. Techniques of differentiation
 4. Derivatives of trig functions
 5. The Chain Rule
 6. Differentials
2. Logarithmic and Exponential Functions
 1. Inverse functions
 2. Logarithmic and exponential functions
 3. Implicit differentiation
 4. Derivatives of logarithmic and exponential functions
 5. Derivatives of inverse trigonometric functions
 6. Related rates
 7. L'Hopital's Rule
1. Analysis of Functions and their Graphs
 1. Increasing, decreasing functions and concavity
 2. Relative extrema: First and Second Derivative Tests
 3. Producing graphs of functions
1. Applications of the Derivative
 1. Absolute maxima and minima
 2. Applied maxima and minima problems
 3. Applications to rectilinear motion
 4. Rolle's Theorem
- G. Integration
 5. Finding areas under curves
 6. The indefinite integral
 7. Integration by substitution
 8. The definite integral
 9. The Fundamental Theorem of Calculus

Note: Many of these topics are explored and reinforced by labs using Mathematica software