Sierra College
Math 24
Modern Business Mathematics
Fall Semester
2018

Instructor:

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Office Hours:

MW 11:45-12: 15,
TTh 9:30-12:30,
Office hours will be held in
The Math Lab, V329

Materials:

Text: Mathematics with Applications, 11th edition, by Lial;
Pearson Publishing

Calculator: A scientific calculator is allowed on occasion. In addition, a graphing calculator is recommended. Either a graphing calculator or a computer algebra system will be used periodically in the classroom for demonstration purposes. The graphing utility device is an excellent tool for acquiring the understanding of many of the concepts of this course due to its ability to rapidly investigate both the numerical and graphical aspects of these concepts. However, on many exams and quizzes, a calculator will not be allowed. There will not

Course Identification:

Math 24, Modern Business Math
Course Code #85349
V303 TTh 12:30-1:50 pm
4 units

Math Lab:

The Math Lab is located in V329
This is free, walk in tutoring.
Hours: TBA

Prerequisites:

Math D, Intermediate Algebra or the equivalent.

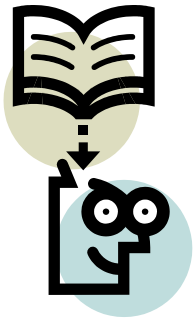
Withdraw Date:

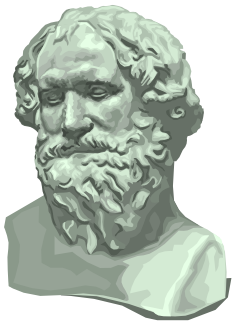
September 3, without a W
October 30, with a W

Holidays:

September 3, Labor Day,
November 22, Thanksgiving Day

be any opportunity to use graphing calculators, cell phones, tablets, or laptops on the quizzes and exams.





Homework:

Homework will be assigned daily, but will be not be collected. Instead, a quiz will be given each Thursday (except those days on which we have an exam) covering the material from the previous homework

Exams:

There will be four 100 point exams and a 150 point comprehensive final exam. The lowest of the four regular exam scores or the quiz total will be dropped in the computation of the final course grade. The exam dates are given below:

Exam I: September 6
Exam II: September 27
Exam III: October 18
Exam IV: November 8
Final Exam: TBA

Grading:

Quizzes:	100 pts
Exams:	400 pts
Final Exam:	150 pts

Quizzes:

There will be more than 10 quizzes, worth 10 points each. The top 10 scores will be used in the computation of your final course grade. There will be no make up quizzes. In having well more than 10, you will easily be able to miss a few.

Group Work:

Working with other students outside of class is strongly encouraged. The Math Lab is an ideal location for working with your peers.

Course Description:

Applications of mathematics in economics and business contexts. Topics include tables and graphs, functions, finance (interest and exponential models), rates of change including applications and optimization, and linear programming.

Workload:

The material is treated with scope and intensity that requires the student to study independently outside of class. This course requires a minimum of two hours of work outside the classroom for every one hour in class.

Attendance:

Attendance isn't incorporated in the final course grade. Nevertheless, solid attendance is necessary to succeed in a course that is both rigorous and fast paced.

Drop/Refunds:

A student must drop him/herself in order to be eligible for a refund. Instructor drops do not generate refunds.

Honesty Policy:

Cheating is of course forbidden. College policy on cheating, as outlined in the student conduct code, will be strictly enforced.

Math Department Website:

The Website for the Math Dept. is at http://math.sierracollege.edu/ This website is a useful resource for graphing paper, other Math Department contacts, full course descriptions, example Assessment Tests, past Math Contests, and much more.

Sierra College Website:

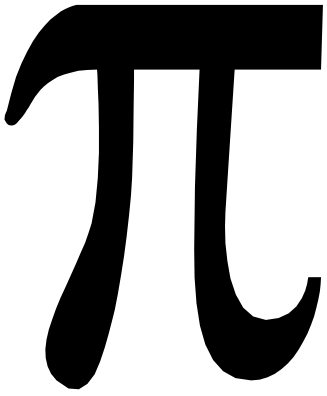
The website for the college is at http://www.sierracollege.edu/ This website provides you with class schedules, academic calendars, and contact information for the various student services that this college offers.

Student Outcomes:

Functions: (Examples include cost, revenue, and profit functions, depreciation functions,

Through homework assignments, quizzes, exams, projects and classroom discussions, the student will be able to:

1. Apply rates of change to marginal analysis and business applications;
2. Logically present clear, complete, accurate, and sufficiently detailed solutions to communicate reasoning and demonstrate the method of solving business problems;
3. Translate, model, and solve applied business problems utilizing derivatives;
4. Construct and interpret graphs of polynomial, exponential, logarithmic, and composite functions; solve linear programming problems graphically.



budget constraints)

1. Formulas, tables, and graphs
   a. Discrete and continuous
   b. Increasing and decreasing
2. Proportionality and linear functions
3. Quadratic functions, power functions, and polynomials
4. Exponential and logarithmic functions
5. Combining functions
   a. Sums and differences
   b. Products c. Composition of functions

Finance:

1. Compound interest
   a. Finite geometric series
   b. Exponential functions and limits (continuous compounding)
2. Present and future value
3. Exponential models in economics
   a. Polynomial growth
   b. Exponential growth
4. Compound Interest Formulas - dependence on P, r, and t

Rates of Change:

1. Average rate of change
2. Marginal cost from a discrete point of view
3. Evaluating rates of change for a variety of elementary functions
   a. Graphical interpretation and evaluation
   b. Numerical evaluation
   c. Algebraic evaluation
   d. Utilize limits and definition of derivative
4. Rates of change for more complicated functions
   a. Sums and differences
   b. Products and quotients
   c. Power Rule
   d. Exponential and logarithmic functions
5. Applications
   a. Marginal analysis
   b. Elasticity of demand
6. Optimization
   a. Extreme points and points of inflection
   b. Profit maximization
   c. Cost minimization (inventory)
   d. Revenue maximization

e. Break even

Linear Programming

1. Examples of Linear Programming problems (product mix, allocation)
2. Necessity of Linear Programming
3. Geometrical or graphical solution of Linear Programming problems
   a. Graphic linear equations and inequalities
   b. Graphing the region of feasibility
   c. Finding corner points and solving the Linear Programming problem

If You Want Your Work to Be Accepted and Graded, Then the Following Must Be Followed:

- Remove any fringe from paper torn out of spiral notebook.
- Do not use graph paper unless it is used solely for graphing.
- All work must be clear and organized.
- A full name must be included.
- Any take home work must be turned in at the very beginning of class on the next class meeting. No late materials will be accepted.
- All paper turned in must be on paper that is approximately 8½ X 11.

Harassment and Discrimination:

Sierra College is committed to providing a safe learning environment, free of harassment and discrimination as described in District policies found on our website. It is my goal that you feel you can share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings and I will seek to keep information you share private to the greatest extent possible; however, I am required to report information about incidents of gender based discrimination, violence and harassment to the College's Title IX Coordinator.