

**Information Sheet**  
**Math 103**

August 24, 2009  
W. Watkins

**Course title and number:** Math Methods for Business, 16148

**Time and place** TR 5:30-6:45, EH 2132

**Textbook:** *College Mathematics for Business, Economics, Life Sciences and Social Sciences*, Custom Edition for California State University, Northridge, Barnett, Ziegler, Byleen, Pearson-Prentice Hall

**Lecture Notes:** My lecture notes are available in a bound collection at the Bookstore. Or you can download a pdf from my website. Part I of the lecture notes is ready now and Part II will be available later in the semester.

**Math 103L** A supplemental lab section is required:

Math 103L 16153 R 4:30-5:20 CR5117, Yer Semerdjian

Math 103L 16154 R 4:30-5:20 CR5119, Akemi Tyler

Math 103L 16155 R 4:30-5:20 CR5123, Sheid Rahmani

The purpose of the lab is help you study the course material, do the homework, and work through the ALEKS tutorial program.

**Instructor:** William Watkins

*Office hours:* Thursday in the Math 103L sections 4:30-5:20, Tue 2:00-2:50 (SN414), Thur 2:00-2:50 (SN414)

*Office:* SN 414

*Webpage:* <http://www.csun.edu/~vcmath006/>

*email:* bill.watkins@csun.edu

**Grading:** Your grade will be computed from the homework, mid-term exams, and the final. There is a total of 200 points possible:

105 points: best three out of four midterms

35 points: homework

60 points: final exam.

*Midterm exams:* There will be four mid-term exams, each worth 35 points. They are given on the following dates:

E1: Sep 15 (Tue)	E2: Oct 08 (Thur)	E3: Nov 03 (Tue)	E4: Dec 01 (Tue)
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Only the best three of the four exams will count for your grade. If you miss a midterm exam, then that will be the one that does not count. **No makeup exams.**

*Final exam:* The final exam will be given on **Saturday**, December 12, from 11:30 to 1:30. You must take the final at this time. It is a departmental final; no calculators, notes, or books are permitted.

*Homework:* Assignments will be done on a computerized homework program called WeBWorK. Your username is your CSUN email minus the “@csun.edu” part. For instance, if your CSUN email is john.p.doe.37@csun.edu, then your username is john.p.doe.37. Your password is your nine digit student ID number (if yours is not nine digits then add zeros at the beginning to make it 9 digits). The system is fairly easy to use, but you may want to read this short introduction to WeBWorK. To find this go to: <https://webwork.csun.edu/> and click on “First Steps for Students” in the upper left corner. I recommend that you print out a hardcopy of your homework rather than working online. However, you must submit your answers online. You should expect to spend about five hours outside of class, and in the lab, working on homework. Your WebWork accounts are ready to use now and the first assignment is up and due on September 3.

*Grade distribution:* I gave the following grades in the Math 103 course last semester:

A: 14	B: 36	C: 24	D: 16	F: 13	WU: 20
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### Sections to be covered:

Sections	Topic
1.1-2	Linear equations and their graphs
2.1	Functions
2.2	Elementary functions: graphs and transformations
2.3	Polynomial and rational functions (only rational functions of the form $(ax+b)/(cx+d)$ )
2.4-5	Exponential and Logarithmic functions
3.1-2	Simple, compound leading to continuously compound interest
2.2-3	Exponential and Logarithmic functions
10.1-7	Limits, continuity, derivative, sum, product, quotient, power rules, applications
11.7	Elasticity
12.1	Absolute max/min
12.6	Optimization
4.1-4	Solving systems of equations and matrices (at least this far)

**Catlog description:** Prerequisites: Passing score on or exemption from the Entry Level Mathematics Examination (ELM), or credit in Math 093 and a passing score on the Mathematics Placement Test (MPT). Concepts and applications of algebra and calculus to business. Topics include functions, systems of equations, matrices, the derivative and business-related topics in calculus. (Available for General Education, Basic Skills; Mathematics).

### Course topics:

1. Functions: Definition and concept; graphs of functions and equations; Linear, quadratic, square and cubic root, general polynomial, absolute value, rational, exponential, logarithmic.

2. Business applications of the above functions: cost, price-demand, revenue, profit,,
3. Mathematics of accounting and finance. Simple interest, compound interest, continuously compounded interest.
4. The derivative: Limits, continuity, difference equations, computing the derivative with the limit, computing derivative of the above functions and their compositions.
5. The derivative and applications to business: Maximum profit is realized when marginal revenue equals marginal costs, elasticity of demand and connection to revenue.
6. Systems of linear equations and applications.
7. Matrices and equations.

**Measurable Course Objectives:** Upon successful completion of the course students will be able to:

- i. Compute with Linear, quadratic, rational functions. Including solving equations involving such functions.
- ii. Prepare a well-scaled graph of a one-variable function
- iii. Find the equation of a linear function from two ordered pairs
- iv. Compute with simple interest, compound interest, and continuously compounded interest models.
- v. Evaluate exponential functions and be able to solve equations with exponential expressions using logarithms
- vi. Find the derivative of a polynomial function and evaluate marginal revenue/cost/profit for a revenue/cost/profit function
- vii. Explain verbally and in writing why maximum profit is realized when marginal revenue equals marginal costs.
- viii. Use derivatives to find local maximum and local minimum points
- ix. Solve a system of linear equations using algebraic (elimination) methods

**GE-SLOs (General Education Student Learning Outcomes):**

1. Represent, understand, and explain mathematical information symbolically, graphically, numerically, and verbally;
2. Develop mathematical models of real-world situations and explain the assumptions and limitations of those models;
3. Use models to make predictions/draw conclusions/check whether results are reasonable/find optimal results; using technology when necessary and appropriate;
4. Demonstrate an understanding of the nature of mathematical reasoning including the ability to prove simple results and/or make statistical inferences

**Assessment of GE-SLOs (General Education Student Learning Outcomes):**

SLO 1 will be assessed through traditional testing and the common final exam. SLOs 2 and 3 will be assessed by evaluating students performance on specially designed word problems that will be imbedded in all midterms and the final exam. The imbedded problems will be consistent from semester to semester which will allow us to do a long term assessment of the SLOs. SLO 4 will be assessed by students performance on at least one exam problem.