

Math 1101

Introduction to Math Modeling

Fall 2007

Instructor: Dr. Donna Saye
Office: Math/Physics 2327
Office Hours: T and Th--1:00-2:00 and 3:30-5:00; M and W--5:00-6:00
Contact Info:
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Credit Hours: 3
Location and Time: **Section G:** Math/Physics 2314B, M & W, 2 – 3:15
Section W: Math/Physics 1309, M & W, 3:30 – 4:45

Prerequisite Courses: Two years of high school algebra or equivalent.

Textbook: *College Algebra in Context with Applications for the Managerial, Life, and Social Sciences*, 2nd Edition, Harshbarger/Yocco

Calculator: A TI-83/84 or TI-83/84 Plus calculator is required for the course. Sharing of calculators on quizzes or exams will not be permitted.

Course Description: The course introduces mathematical modeling using graphical, numerical, symbolic, and verbal techniques to describe and explore real-world data and phenomena. One studies the investigation and analysis of applied problems and questions, and effective communication of quantitative concepts and results. Topics include linear, quadratic, polynomial, exponential and logarithmic models of real-world phenomena. This course is suggested as an alternative to College Algebra to satisfy area A core curriculum requirements designed for students who do not need a MATH 1441 preparatory mathematics course.

Course Objectives:

The student will:

1. be able to use mathematical models to quantify real life situations.
2. understand mathematics as an art of exploring, seeking patterns, making guesses, checking, revising, and generalizing.
3. improve algebraic skills by using algebra to describe and analyze situations.
4. understand effective uses of technology in problems-solving.

For General Education Objectives, see

http://academics.georgiasouthern.edu/provost/instruction/gened_outcomes.html

Assessment of Course Objectives: Student achievement will be measured through the use of homework and/or group work assignments, announced or unannounced quizzes, three exams, and a comprehensive final exam.

MyMathLab: MyMathLab is an interactive website where students can find practice exercises, practice tests, videos, and work interactive problems that are partnered with the Harshbarger/Yocco text. Although no homework or quizzes will be assigned using this resource, you may acquire an access code if you desire to use this resource. The code is packaged free with a new textbook, or it can be purchased separately at the bookstore or online at www.coursecompass.com.

Grading Policy: Grades will be assigned based on the following percentage of points earned from measurement of student achievement of course objectives:

Tests.....	60%
Homework/Quizzes/Groupwork.	15%
Modeling Project.	5%
Final Exam.....	20%

The course grading scale will be

90%-100% A; 80%-89% B; 70%-79% C; 60%-69% D; <60% F

Make-up Policy: No make-up tests will be given. If you are absent on the test day, **and** you have a valid reason for being absent (very sick, family emergency, etc.), **and** you have documentation for being absent (doctor’s note, legal documents, etc.), then your grade on the final exam will replace the missed test grade. Only one missed test will be replaced by the final exam. Any other missed tests will be averaged as a 0. Any graded in-class work missed will be given a grade of 0 and cannot be made up.

Attendance Policy: Students are expected to attend each class meeting. We will cover a lot of material in this class. A student who misses class is responsible for finding out what was discussed and learning the material that was covered on the missed day. The instructor is **not** responsible for re-teaching material missed by a student who did not attend class. A bonus of **two points** will be added to your final grade if you are absent **no more than two days**. When assigning the bonus points, the instructor does not count absences as excused or unexcused; you are either in class or you are absent. A grade of **F** will be assigned if a student is absent more than 4 days.

Academic Dishonesty: Any student who exhibits academic dishonesty in any form will receive a failing grade (F) for the entire course and will be reported to the University Judicial Officer. For a full discussion of academic dishonesty, see the Student Guide at <http://students.georgiasouthern.edu/sta/guide/>. Storing unauthorized programs or information in your calculator is considered cheating.

Civility Statement: Each student is expected to follow the Student Conduct Code, with regards to appropriate behavior in the classroom. Inappropriate behavior includes any activity that may detract from your fellow classmates’ learning experience or in the instructor’s ability to conduct class. Electronic devices such as cellular phones, pagers, and media players must be off while the student is in the classroom. Please respect your peers by not being disruptive in class.

Disability Policy: If you have a physical, psychological, and/or learning disability, which may affect your performance in this class, please contact the Student Disability Resource Center as soon as possible. The Center will determine appropriate accommodations based on testing and medical documentation. See their website at <http://students.georgiasouthern.edu/disability>.

Additional Help: The Academic Success Center offers free peer tutoring during the week. Contact the tutorial centers for exact hours at (912) 681-0321 or visit their website at <http://academics.georgiasouthern.edu/success/>.

Important Dates:

September 3	Labor Day Holiday
October 8	Last day to drop without academic penalty
November 21-23	Thanksgiving Holidays
November 29	Last day of classes
December 5 from 3:00 to 5:00	Final Exam for Section G (2:00 class)
December 3 from 3:00 to 5:00	Final Exam for Section W (3:30 class)

Proposed Schedule for Math 1101 – Introduction to Math Modeling

Week	Sections to be covered
1	Introduction 1.1 Functions and Models
2	1.2 Graphs of Functions 1.3 Linear Functions
3	1.4 Equations of Lines 1.5 Algebraic and Graphical Solution of Equations
4	1.6 Fitting Lines to Data Points: Modeling Linear Functions 1.7 Systems of Linear Equations in Two Variables
5	Review TEST 1
6	2.1 Quadratic Functions; Parabolas 2.2 Solving Quadratic Equations
7	2.3 A Library of Functions
8	2.4 Quadratic and Power Models
9	Review Test 2
10	3.1 Exponential Functions 3.2 Logarithmic Functions
11	3.3 Exponential and Logarithmic Equations; Properties of Logarithms 3.4 Exponential and Logarithmic Models
12	3.5 Exponential Functions and Investing 3.7 Logistic and Gompertz Functions
13	Review Test 3
14	4.1 Higher Degree Polynomial Functions 4.2 Modeling Cubic and Quartic Functions
15	6.5
16	Final Exam