

M110 Modeling with Elementary Functions

Fall 2014

Section: 008	CRN: 48781/48885	Professor: Vincent J. Motto
Meeting times: MWF, UT 306 1130-1220 MWF, UT 306 1230-1320		Phone: x4306 Email: motto@hartford.edu Office: Dana 220/208 Office hours: MWF 1000 - 1100
Credits: 3		
Prerequisite: Two years of algebra		Course site: Blackboard & www.vincesplace.com

Texts & Supplies:

You will need a graphing calculator. A TI-83+ or TI-84 is required. You should maintain a large spiral or loose-leaf notebook exclusively for this course divided into sections by chapter where you keep note and homework. It will help you prepare for tests.

The required text is **Modeling with Elementary Functions** by Dr. Raymond McGivney which is available in the book store.

Catalog Description:

A study of linear, quadratic, cubic, exponential, and logistic equations and their use in modeling real-world phenomena; the graphing of functions; solving equations with one or more variables; and systems of linear equations. The solution of word problems is stressed throughout. This course may serve as preparation for M 112 but not for M 144.

Prerequisite: Two years of algebra.

Course Objectives:

At the completion of this course the student will:

- Be exposed to the concept of modeling
- Be able to apply modeling theory to linear, quadratic and exponential problem situations.
- Expand and extend their critical thinking and problem solving skills
- Have an appreciation for the *experimental* side of mathematics
- Be able to solve a variety of financial problems
- Become an intermediate to expert user of the graphing calculator (TI-83+)

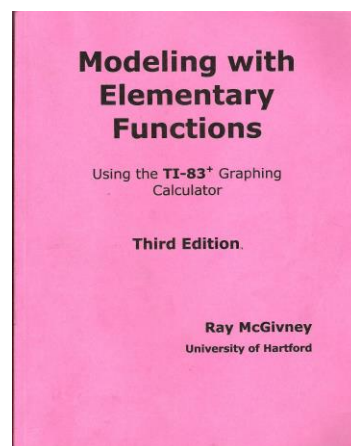
Evaluation:

Teaching Methods:

Demonstrations: Important material from the text and outside sources will be covered in class. Students should plan to take careful notes as not all material can be found in the textbook. Discussion and group work is encouraged.

Homework: Problems and readings will be assigned daily to help support and supplement material found in the text, but not always collected. There will usually be time to answer questions about the homework at the beginning of class.

Forward Testing/Practice Test: Sample test questions for your practice will be given out about two days before a test. Often the day before the test will be given over as a Problem Day to discuss these and other problems



Tests: There will be five tests. If due to emergency or illness you miss a test, you must notify as soon as possible. You must provide documentation explaining why you missed the test. If you fail to contact me or fail to provide written documentation for a missing test, you will receive a zero on the test. The make-up must be taken within a week. All test dates are published on the course schedule.

Quizzes: Through the semester, there will be in-class, announced quizzes. There are **NO** make-ups for quizzes.

Laboratories: There will be three lab projects during the course of the semester.

Worksheets: These will be used for group work to provide review, extension, and practical problems.

Final Exam Date: There is a common departmental final on 18 December at 8:00 AM in room TBA.

Internet: All materials will be distributed on the Internet. Class notes, instructional material, and student assignments will be posted on the web site as well.

More information is available on the Web Site for this course or Blackboard.

Grading:

Your final grade will be determined on the total points which you have accumulated.

Five Exams	45%
Three Laboratories	15%
Homework	10%
Quizzes	10%
Final Exam	20%

No grade will be assigned until all of the assignments are completed. Submission of assignments in electronic form (e-mail) is preferred when possible.

Grade	Range	Grade	Range
A	94 - 100	C	74 -76.9
A-	90 - 93.9	C-	70 -73.9
B+	87 - 89.9	D+	67 - 69.9
B	84 - 86.9	D	64 - 66.9
B-	80 - 83.9	D-	60 - 63.9
C+	77 - 79.9	F	below 60

Policies

Below you will find a summary of course and University policies. Information about my course policies can be found on my [website](#) and information about University policies on the University of Hartford [website](#). These summaries are given for your convenience.

- Attendance---All students are expected to attend every class.
- Work Integrity---Honesty and integrity are expected in all academic work. Your work should be yours alone.
- Social Interaction
 - Civility---All people at the college deserve to be treated with respect and courtesy.
 - Electronic Devices---Please place your phones in a “courtesy” mode and put away your portable music playing devices. If you need to carry on a conversation please leave the classroom.
 - Emails---When communicating with me please include your class in the subject heading and your name.
 - Sexual Harassment will not be tolerated.
- Special Needs---Students with documented special needs will be accommodated. If you are being tested outside the class time, you must make those arrangements
- Student Rights---The process of Academic Grievances can be found on the University [website](#).
- Notice of Modifications to the syllabus---Any changes to the syllabus will be discussed with you

Tentative Schedule of Events

Date	Activity
09/03	Introduction
09/05	Sections 1.1 Review of Linear Functions
09/08	Sections 1.2 Introduction to TI-83
09/10	Sections 1.3 Two Important Questions (revisited) General Instructions for the Labs Lab One
09/12	Sections 1.4 Linear Data Sets and “STAT”
09/15	Sections 1.5 Best-Fit Lines and Residuals
09/17	Sections 1.6 Applications
09/18	Sections 1.7 Preview of Coming Attractions

Date	Activity
09/22	Problem Day
09/24	Exam 1
09/26	Section 2.1 Quadratic Functions Lab One Due
09/29	Section 2.2 Optimization
10/01	Section 2.3 Quadratic Data Sets and Models
10/03	Problem Day
10/06	Exam II
10/08	Section 3.1 Exponential Functions
10/10	Section 3.2 Exponential Growth and Decay
10/13	Section 3.3 Exponential Data Sets and Models
10/15	Section 3.4 Applications (Part 1)
10/17	Section 3.4 Applications (Part 2)
10/20	Section 3.5 Choosing the Best Model
10/22	Problem Day
10/24	Exam III
10/27	Lab Two Due
10/29	Section 4.1 Compound Interest
10/31	Section 4.2 "APPS" - Finance

Date	Activity
11/03	Section 4.3 Amortization
11/05	Section 4.4 Annuities
11/07	Section 4.5 Annual Percentage Yield, Doubling Time, and Continuous Compounding
11/10	Section 4.6 Assorted Exercises
11/12	Problem Day
11/14	Exam IV
11/17	Lab Three Due
11/19	Section 5.1 Introduction (to Linear Systems)
11/21	Section 5.2 Matrices – Row Reduction Methods
11/24	Section 5.3 Applications (Part 1)
11/26	No Classes – Thanksgiving Break
11/28	No Classes – Thanksgiving Break
12/01	Section 5.3 Applications (Part 2)
12/03	Section 6.1 Cubic Function
12/05	Problem Day
12/08	Exam V
12/10	Lab Four Due
12/12	Review for Final Exam
12/17	Final Exam 8:00 – 10:00 AM Room to be announces

If you have any problems with class/instructor, discuss them first with their instructor and then, for additional assistance contact the Department Chair, Dr. James McDonald (860.768.4628).