University of Hartford
200 Bloomfield Avenue
West Hartford, CT 06117

Mathematics, Physics, and Computer Science Department
Where education enhances technology

M110 Modeling with Elementary Functions Fall 2015

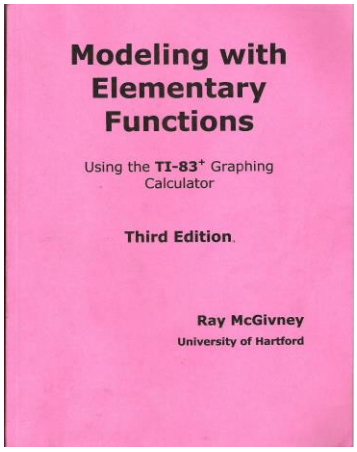
Section: 005/006 **CRN:** 41999/42003
Meeting times:
MWF, Dana 232 1230-1320 (41999)
MWF, Dana 232 1455-1610 (42003)
Credits: 3
Prerequisite:
Two years of algebra

Professor: Vincent J. Motto
Phone: x4306
Email: motto@hartford.edu
Office: Dana 220/208
Office hours:
MWF 1130 - 1220
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.

Routine 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.

Formal Homework: There will be five (5) homework sets. These problem sets will be due the day of the associated test and will be graded.

Final Exam Date: There is a common departmental final on 17th of 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 you 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

Week	Date	Activity
1	09/02 – 09/04	Introduction Sections 1.1 Review of Linear Functions Sections 1.2 Introduction to TI-83 Linear Worksheet
2	09/07 – 09/11	Labor Day Sections 1.3 Two Important Questions (revisited) General Instructions for Laboratories Lab One Information Sections 1.4 Linear Data Sets and "STAT"
3	09/14 – 09/18	Sections 1.5 Best-Fit Lines and Residuals Sections 1.6 Applications Sections 1.7 Preview of Coming Attractions
4	09/21 – 09/25	Problem Day Exam 1
5	09/28 – 10/02	Section 2.1 Quadratic Functions Section 2.2 Optimization Lab One Due Lab Two Information Quadratic Worksheet

Week	Date	Activity
6	10/05 – 10/09	Section 2.3 Quadratic Data Sets and Models Problem Day Section 3.1 Exponential Functions Exponential Worksheet
7	10/12 – 10/16	Exam II Section 3.2 Exponential Growth and Decay Section 3.3 Exponential Data Sets and Models Section 3.4 Applications (Part 1)
8	10/20 – 10/23	Section 3.4 Applications (Part 2) Section 3.5 Choosing the Best Model Problem Day
9	10/26 – 10/30	Exam III Lab Two Due Section 4.1 Compound Interest Section 4.2 "APPS" – Finance Finance Worksheet
10	11/02 – 11/06	Section 4.3 Amortization Section 4.4 Annuities Section 4.5 Annual Percentage Yield, Doubling Time, and Continuous Compounding
11	11/09 – 11/13	Section 4.6 Assorted Exercises **Thanksgiving Break**
12	11/16 – 11/20	Problem Day Exam IV Lab 3 Due
13	11/23 – 11/27	Section 5.1 Introduction (to Linear Systems) Linear System Worksheet **Thanksgiving Break**
14	11/30 – 12/04	Section 5.2 Matrices – Row Reduction Methods Section 5.3 Applications (Part 1) Section 5.3 Applications (Part 2)
15	12/07 – 12/11	Section 6.1 Cubic Function Cubic Worksheet Problem Day Exam
16	12/14	Review for Final Exam
	12/17	Final Exam 8:00 – 10:00 Am Room TBA

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).