

M112 Short Course in Calculus

Spring 2013

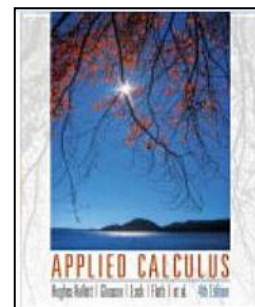
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|----------------------------------|-------------------|--|
| Section: 01 | CRN: 21933 | Professor: Vincent J. Motto |
| Meeting times: | | Phone: x4306 |
| MWF Dana 204 1230 – 1320 (25704) | | Email: motto@hartford.edu |
| MWF Dana 204 1330 – 1420 (25113) | | Office: Dana 205 |
| Credits: 3 | | Office hours: |
| Prerequisite: | | MWF 1130-1220 and 1430-1530, or appointment |
| M 110 or equivalent | | Course site: www.vincesplace.com |

Texts & Supplies:

You will need the following items:

- A calculator (graphing --- TI-89 (recommended))
- A straightedge
- Graph paper
- Three-ring binder or large notebook (optional)

The text book for the course is **Applied Calculus** by Hughes-Hallett et al. (4th Edition) published by Wiley. The book is available in the bookstore.



Catalog Description:

A one-semester introduction to the basic concepts and applications of differential and integral calculus. For students who wish to satisfy the Arts and Sciences mathematics-science distribution requirements, the Barney School of Business mathematics requirement, or the mathematics requirement in the health sciences. No credit given to students who have previously received credit for M 144 or its equivalent.

Course Objectives:

At the completion of this course the student will:

- become familiar with the following conceptual and theoretical constructs of calculus
 - Limit
 - Derivative
 - Definite Integral
 - Indefinite Integral
- employ algebra to calculate limits, derivatives and integrals in the class of functions including polynomials, rational functions, exponential function and logarithmic functions
- understand the connections between theoretical constructs of calculus and generic applications such as rate of change, linear approximations, optimization problems, curve analysis by derivatives, marginals, and estimating changes such as distance traveled.
- Students will apply calculus concepts to real-world situations extracted from various disciplines. In applications, students will learn to
 - recognize and apply the appropriate calculus techniques needed to analyze the situation.
 - explain conclusions and limitations of their analysis.
- apply technology (TI-83+ or TI-84 calculator) to the solution of problems
- develop their ability to express mathematical ideas and concepts through written (electronically prepared) solutions to two laboratories.

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 texts and readings. 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.

Tests: There will be six tests. If due to emergency or illness you miss a test, you must notify me before or during the test. 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 will be more difficult than the original and must be made up 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 two 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 Wednesday, May 9 from 8:00 AM to 10 PM, 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.

Grading:

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

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|------------------|-----|
| Six Exams | 45% |
| Two 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 |

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Policies

Below you will find a summary of course and college policies. Information about my course policies can be found on the websites that support this course. 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.
 - Smoking/Drug Use---ACC is a smoke-free building. Smoking is permitted in designated outside areas.
- Special Needs---Students with documented special needs will be accommodated.
- Student Rights---The process is Academic Grievances can be found in the University catalog.
- Change---Any changes to the syllabus will be discussed with you.

Proposed Schedule of Events

| Week | Activity |
|-----------|---|
| | |
| | Introduction, Sections 1.1 |
| 1-(01/25) | Modeling Data Sets Sections 1.2 |
| | |
| | Sections 1.3 – 1.4 |
| 2-(02/01) | Sections 1.5 – 1.6 |
| | Section 1.7 |
| | |
| | Section 1.8 |
| 3-(02/08) | Sections 1.9 |
| | Snow Day |
| | |
| | Snow Day |
| 4-(02/15) | Review / Take-Home Test # 1 |
| | Section 2.1 - 2.2 |
| | |
| | Section 2.3 – 2.4 |
| 5-(02/22) | Section 2.5 |
| | Section 3.1 - 3.2 & Practice Test # 2 |
| | |
| | Discussion of Practice Test # 2 Laboratory 1 Assigned Due Date TBA |
| 6-(03/01) | Test # 2 |
| | Section 3.3-3.4 |

| Week | Activity |
|------------|---|
| | |
| | Section 3.5-4.1 |
| 7-(03/08) | Section 4.2 - 4.3 |
| | Section 4.4 - 4.5 |
| | |
| | Section 4.6 - 4.8 |
| 8-(03/15) | Review |
| | Text # 3 |
| | |
| | Section 5.1 - 5.2 Laboratory 2 Assigned Due Date TBA |
| 9-(03/22) | Section 5.3 - 5.4 |
| | Section 5.5 |
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| | |
| 3/23-3/31 | Spring Break |
| | |
| | Review |
| 10-(04/05) | Test # 4 |
| | Section 6.1-6.2 |
| | |
| | Section 6.3 - 6.4 |
| 11-(04/12) | Review |
| | Test # 5 |
| | |

| Week | Activity |
|-------------|---|
| | |
| | Section 7.1 - 7.2 |
| 12-(04/19) | Section 7.3 |
| | Section 7.4 |
| | |
| | Section 7.5 |
| 13-(04/26) | Review |
| | Test # 6 |
| | |
| | Selected Topics |
| 15-(05/03) | Selected Topics |
| | Review |
| | |
| 16-(05/06) | Review |
| | |
| May 9, 2013 | Final Examination 8-10 AM Room TBA |

*** This course syllabus is subject to change at the discretion of the instructor ***

If you have any problems with class/instructor, discuss them first with your instructor and then, for additional assistance contact the Mathematics Department Chair, Dr. John Williams (860.768.4825).