

**NREM 203**  
**Applied Calculus for Management, Life Sciences and Human Resources**  
**University of Hawai`i at Manoa**

**Instructor:** Richard Bowen  
 Sherman 223  
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**Office Hours:** Mondays 9:00 – 12:00 noon  
 Or call/email for an appointment

<b>Teaching Assistants:</b>	Noe Abejon	Bart Batista
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Office Hours	Thursdays 1:30 – 4:30 pm	Tuesdays 12:00 am – 3:00 pm

**Course Description:** Applications of calculus (limits, differentiation, exponential and logarithmic functions, integration) to problems in business management, economics, social and life sciences.

**Course Objective:** The objective of this course is to enable students to utilize algebra and calculus to solve problems in business and in the social and life sciences. Students will learn how to express simplified, real world problems in mathematical terms and use the concepts and rules of calculus to obtain solutions. Students will demonstrate successful achievement of this objective through exams and quizzes.

**Symbolic Reasoning:** This course is an undergraduate foundations course in symbolic reasoning. Such courses expose students to the beauty and power of formal systems, as well as to their clarity and precision and do not focus solely on computational skills. Students learn the concept of proof as a chain of inferences. They learn to apply formal rules or algorithms; engage in hypothetical reasoning; and traverse a bridge between theory and practice. In addition, students develop the ability to use appropriate symbolic techniques in the context of problem solving and to present and critically evaluate evidence.

**Textbook and Supplement:**

1. Laurence D. Hoffmann and Gerald L. Bradley  
 Calculus For Business, Economics, and the Social and Life Sciences  
 McGraw Hill, Tenth Edition
2. Student’s Solutions Manual (to accompany the Tenth Edition)

**Course Website:** The course website is available on [www.laulima.hawaii.edu](http://www.laulima.hawaii.edu) and is accessible through your MyUH account. Check the site as needed for the course syllabus, current calendar of lectures/labs/homework, grades and announcements.

**Organization:**

1. Tuesdays and Thursdays lecture sessions are for the entire class. Attendance is not mandatory and will not be taken. Mid-term exams will be given during lecture sessions.
2. Friday lab sessions are offered for students to solve problems that have been covered in the lectures that week. They are led by graduate student teaching assistants and are a means for ensuring that students can apply what is being taught in the lectures and do not fall behind. Quizzes will be given frequently for part of the scheduled time.
3. Homework problems are assigned to demonstrate that you can solve the types of problems covered in the book and lectures. They are not turned in or graded and the answers (to all odd numbered problems) are given in the Student's Solutions Manual. You may ask your TA to verify an answer to even numbered questions; however, you must provide evidence that you have attempted to solve the problem. Doing homework on a timely basis is the key to success in this the course.
4. Quizzes will be given during some lab sessions. At least 2 quizzes will be given before each exam. All quiz questions will be from, or similar to, the assigned homework problems; so doing your homework before Friday labs will be to your advantage.
5. Exams: There will be three written examinations (two mid-term exams and a final exam). The final examination is heavier weighted because the last part of the course covers more material, is more difficult and the exam is longer.
6. Calculators: A scientific or financial calculator will be needed. There are three functions that are needed: (1)  $y^x$ ; (2)  $e^x$ ; and (3)  $\ln$  or  $\ln X$ . The TI-30, TI-BAll and Sharp-EL531 are three such models that are available at the bookstore. Graphing calculators are not required and are not permitted in quizzes and exams. However, graphing programs, whether handheld or PC based, are a useful tool for visualizing the shape of curves and you are encourage to use them in your homework.
7. Grades:

a. First Mid-term exam (Chapters 1 & 2)	25%
b. Second Mid-term exam (Chapter 3)	25%
c. Final Exam (Chapters 4 and 5)	35%
d. Quizzes	15%
8. Grading Policy: Letter grades for the course will be assigned on a plus/minus grading system. A grade in the "C" range means that you have demonstrated sufficient knowledge of applied calculus to meet course expectations. "A" denotes superior performance; "B" signifies above average performance; "D" signifies a weak understanding of applied calculus; "F" denotes a failure to demonstrate the basics of calculus or failure to take all of the exams. My hope is to not have to give any grades in the "D" and "F" ranges.
9. Exam/Quiz Make-Up Policy: The lowest score on quizzes will be dropped; hence you can miss one quiz with no penalty. If we have more than 8 quizzes, the lowest 2 scores will

be dropped. You must take all three exams; failure to do so will result in a grade of "F." Make-up quizzes and exams will be given only for a legitimate excuse with proper validation, e.g. a doctor's certificate for serious illness or incapacity. For make-up quizzes, you must contact the TA of your section by phone or email within 24 hours of the quiz. For make-up exams, you must contact the instructor within 24 hours of the exam. Follow the following procedure:

- Contact your section TA (quiz) or Professor (exam) by phone or email or both. If he is not in, leave a message on his telephone answering service. Your message should include the following information:
  - Your name and lab section
  - Reason for missing the exam or quiz
  - Email and phone number where you can be reached
  - Earliest times that you can take the make-up exam or quiz
- Failure to follow this procedure or not have a valid excuse will disqualify the student from taking the make-up exam or quiz.

### **Guidelines on how to succeed in this course**

1. Pay attention in class and solve practice problems that are presented.
2. Do the assigned homework problems, preferably prior to each lab session.
3. Solve additional problems
4. Plan to spend two to three hours working on the course outside of class time for each credit hour, i.e. six to nine hours per week, as a minimum.
5. Come to office hours or ask the instructor or TAs for guidance or assistance if you are unclear about where the course is going or are uncertain about the answers to any of the problems covered in class or in the book.

### **Other Policies:**

1. We are able to accommodate students with special needs. If you special needs, see me or your section TA. You confidentiality will be maintained
2. Cheating will not be tolerated. Cheating includes but is not limited to giving or receiving unauthorized assistance during an examination and obtaining unauthorized information about an examination before it is given. This includes "wandering eyes," and use of cellular phones or other text messaging or data storage devices during exams (a calculator only is allowed). To reduce the appeal, up to four different versions of the examination are distributed.
3. Sexual, racial and other forms of harassment will not be tolerated. For these and other types of intolerable behavior, please familiarize yourself with the Student Conduct Code. [http://studentaffairs.manoa.hawaii.edu/policies/conduct\\_code/Student](http://studentaffairs.manoa.hawaii.edu/policies/conduct_code/Student)
4. IDs will be checked at exams. You must bring your student ID to examinations.
5. You must attend the lab section to which you are registered; space is too limited to allow choice. Only if you have obtained advance permission from your TA may you attend another section.
6. Attendance at lectures or labs is not mandatory; attendance will not be recorded.