Course Description: Basic concepts; differentiation, differential equations and integration with applications directed primarily to the life sciences.

Prerequisite: a grade of C or better in 140 or precalculus assessment.

Text: *Calculus for the Life Sciences* by Greenwell, Ritchey and Lial.

Instructor: J. B. Nation, Keller Hall 406. Office hours 9:30-10:20 Monday, 9:30-11:00 Thursday, and by appointment (956-4655). The teaching assistants will have separate office hours.

Teaching Assistant: Cameron Bloomer, Keller Hall 412, and Jean Verrette, Keller Hall 403B.

Course Web Pages: www.math.hawaii.edu/~jb

Grading: Homework counts 20%, midterms and quizzes 50%, and the final exam is 30%.

Homework: There are three components to the homework grade.

1. Problem using the computer homework system Webworks. The use of this will be explained in class.
2. Worksheets will be given weekly, to be worked in the recitation section and completed at home.
3. You must go to office hours at least twice during the semester, before the end of classes. These two visits count one homework assignment each.

Due dates for recitation worksheets will be determined by your TA. You are allowed 2 late assignments; subsequent late assignments will be given half credit. No assignment will be accepted more than 1 week late. You may work together on homework, but avoid straight copying.

Final Exam. The final exam is Friday, May 10 at 2:15 in Bilger 150.

Academic Expectations: Cheating on exams will not be tolerated, and will result in failure of the course. We reserve the right to pursue further remedies in aggravated cases.

Learning calculus requires both study and practice. The instructors cannot learn calculus for you, we can only guide your efforts. The departmental statement of academic expectations on our web page (www.math.hawaii.edu, under the tab Undergraduate) applies to all students.

Honors Seminar: There is an optional 1-credit seminar (Honors 190 Sec. 3) to accompany Math 215. The seminar will study in greater depth discrete and continuous modeling of various phenomena. It meets Tuesdays at 1:30 in Keller 401.

Date: January 9, 2013.
Course Outline:
(1) Preliminaries – the real numbers, Sections 1.1, 1.3, Chapter 2
(2) Limits and Continuity – Sections 3.1 and 3.2
(3) Differentiation – Sections 3.4, Chapter 4, Section 6.5
(4) Applications of Derivatives – the Mean Value Theorem, Sections 5.1, 5.2, 6.1, 6.2, 5.3, 5.4, 6.3, 6.4
(5) Integration and the Fundamental Theorem of the Calculus – Sections 7.1–7.4
(6) Methods of integration – Sections 7.5, 7.6, Chapter 8
(7) Elementary Differential Equations – Sections 11.1–11.3