

MATH 215 - APPLIED CALCULUS I SYLLABUS

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 MWF 10:30–11:20, and by appointment (956-4655).

Teaching Assistant: Chee Chen, Keller Hall 402B, Office hours Tuesday and Thursday 9:00–10:15, Friday 10:30–11:20.

Course Web Pages: www.math.hawaii.edu/%7Ejb
www.math.hawaii.edu/%7Echee

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

Homework: There are three components to the homework grade.

- (1) Problems from the course website. The use of this will be explained in class.
- (2) Worksheets will be given on many Tuesdays and Thursdays, to be worked in the recitation section.
- (3) You must go to office hours at least twice during the semester. These visits count one homework assignment each.

Homework assignments and recitation worksheets are due on Mondays. You are allowed 3 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 Monday, December 15 at noon in Keller 302.

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 populations and epidemics. It meets Fridays at 1:30 in Keller 401.

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