MTH 312 ADVANCED CALCULUS - Winter 2018

Class Meetings MWF 9:00-9:50am, W 10:00-10:50am in HOV 202

Instructor Elaine Cozzi

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- Phone: 737-4175
- Office Hours: Mon: 1:00pm-2:00pm, Wed: 2:30pm-3:30pm, Fri: 10:30am-11:30am

Text Advanced Calculus, by Fitzpatrick (second edition)

Course Webpage http://people.oregonstate.edu/~cozzie/MTH312W18.html

The first-day handout, homework assignments, and other course materials will be posted on the course webpage. In addition, grades on homework, worksheets, and quizzes will be posted on Canvas throughout the term.

Course Content Topics include Riemann integration, improper integrals, Taylor polynomials, sequences and series of functions, pointwise and uniform convergence, and introductory aspects of multivariable calculus. These topics are covered in Chapters 6, 8, 9, 10, and 11.

Prerequisites Completion of MTH 311 with a grade of C- or better. MTH 342 must be taken prior to this course (with a grade of C- or better) or simultaneously with this course.

Course Assessment Your overall grade will be determined by the following:

- Homework: 25%
- Worksheets: 10%
- Midterm Exam: 30%
- Final Exam: 35%

Homework Homework will usually be due on Fridays at the beginning of class, although you may occasionally have homework due on a Monday or Wednesday. The first assignment will be due on January 19. You are strongly encouraged to discuss homework problems with your classmates outside of class; however, you must write up and submit your own work. Late homework will not be accepted under any circumstance. Your two lowest homework grades will be dropped.

Worksheets On most Wednesdays, students will spend one hour working in groups on worksheets, to be turned in the following Wednesday for a grade. The purpose of these worksheets is to encourage collaborative work among students and to stimulate class discussion. Your lowest worksheet grade will be dropped.

Exams There will be one in-class midterm and a final exam. The midterm is tentatively scheduled for Wednesday, February 14. The final is cumulative and will be held on Tuesday, March 20, 12:00pm - 1:50pm.
Learning Outcomes Upon completing MTH 312, the successful student is expected to be able to analyze and construct rigorous mathematical arguments using mathematical concepts including the following:

- Darboux sums and upper and lower integrals
- the Archimedes-Riemann Theorem
- The first and second fundamental theorems of calculus
- Taylor polynomials: in particular, the Lagrange remainder theorem, Cauchy integral remainder theorem, and Weierstrass approximation theorem
- pointwise and uniform convergence of sequences of functions
- convergence of sequences in $\mathbb{R}^n$
- open and closed sets in $\mathbb{R}^n$
- continuity and compactness in $\mathbb{R}^n$

Students with Disabilities Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Academic Honesty Students are expected to be familiar with Oregon State University’s Statement of Expectations for Student Conduct. Please review this statement at http://oregonstate.edu/admin/stucon/achon.htm