MAT 322-01/MAT 523-01, Analysis in Several Dimensions, Spring 2022 Syllabus

Mathematics P131 Monday/Wednesday 2:40-4:00

Please read the entire syllabus carefully before continuing in this course. Be sure that you are available for the exams.

Instructor: Dr. Matthew Romney (matthew.romney@stonybrook.edu)
Office: Math Tower 4-101B
Office Hours: Monday 1-2pm, Wednesday 12-1pm, or by appointment.
Grader: Jae Ho Cho (jaeho.cho@stonybrook.edu)

Course Description This is a second course in real analysis. Topics include: continuity, differentiation, and integration in Euclidean n-space; differentiable maps; implicit and inverse function theorems; differential forms and the general Stokes's theorem. This course is offered as both MAT 322 and MAT 523.

Prerequisites: C or higher in MAT 203, MAT 220, MAT 307, or AMS 261; C or higher in MAT 310 or MAT 315; B or higher in MAT 320.

Course Webpage: www.math.stonybrook.edu/~mromney/mat322b.html

Exam Dates

- Midterm 1: Wednesday, March 2, 2:40-4:00pm
- Midterm 2: Wednesday, April 20, 2:40-4:00pm
- Final Exam: due Wednesday, May 11 at midnight

Graded Components

- **Homeworks** – 30% of course average.
- **Two Midterm Exams** – 35% of course average
- **Final Exam** – 35% of course average

The grades threshold will be no worse than the following: A 93-100; A- 90-92; B+ 87-89; B 83-86; B- 80-82; C+ 77-79; C 70-76; D 60-69; F 0-59. Depending on the final score distribution, these cutoffs may be relaxed.

Overview

We will cover almost all of Munkres's book *Analysis on Manifolds* together. This course is designed to be among the most difficult undergraduate math courses, essentially a bridge between undergraduate- and graduate-level mathematics. While I will try to make the material as accessible as possible, you are expected to read the book and learn things on your own initiative.

Homework

There will be a homework assignment most weeks. These will be listed on the course website. Homework should be submitted on Gradescope (access code 5VGJKB). Scores will be recorded on Blackboard. Each week's homework assignment is due at the beginning of Monday's lecture (2:40 pm) of the following week. Homework may be turned in up to a week late for 70% of the points. If you have a question about grading, please contact the grader first.

You are welcome to work together with your fellow classmates on the homework, provided that each person in a group is actively contributing. In particular, you must completely understand your solution and write it in your own words. If you use an outside resource, such as an internet site, you should cite this in your solution.

Exams

The midterm exams will be given in class, while the final exam will be a take-home test. It will be released following the final day of class and you will have one week to complete it. There will also be an oral component to the test, where you will be asked to explain some of your solutions.

No make-up exams will be given. If a student misses a midterm exam with documented evidence, then the student's final exam grade will be substituted for the missed midterm. A student must submit a final exam in order to receive a passing grade in the class.

Student Absences Statement

Students are expected to attend every class, report for examinations and submit major graded coursework as scheduled. If a student is unable to report for any exams or complete major graded coursework as scheduled due to extenuating circumstances, the student must contact the instructor as soon as possible. Students may be requested to provide documentation to support their absence and/or may be referred to the Student Support Team for assistance. Students will be provided reasonable accommodations for missed exams, assignments or projects due to significant illness, tragedy or other personal emergencies. In the instance of missed lectures, the student is responsible for the material covered. Please note, all students must follow Stony Brook, local, state and Centers for Disease Control and Prevention (CDC) guidelines to reduce the risk of transmission of COVID. For questions or more information, visit `https://www.stonybrook.edu/commcms/comingback/students.php`.

Student Accessible Support Center Services

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Disability Support Services (631) 632-6748 or

`studentaffairs.stonybrook.edu/dss/`

They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instance of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at

`www.stonybrook.edu/uaa/academicjudiciary/`

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, and/or inhibits students' ability to learn.

The instructor reserves the right to modify the standards and requirements in this syllabus. Notice of such changes will be by announcement in class, and changes to this syllabus will be posted on the course website.

This syllabus was last revised on February 2, 2022.