

**MAT 324: REAL ANALYSIS – FALL 2016**  
**GENERAL INFORMATION**

**Instructor.** Remus Radu

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Office: Math Tower 4-103, Phone: (631) 632-8266

Office Hours: Wednesday 12-2pm in Math Tower 4-103

Monday 3-4pm in MLC, or by appointment

**Course Grader.** El Mehdi Ainasse

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Office Hours: Wednesday 4-5pm in Physics D-107

Monday 4-4:30pm, Wednesday 10-11am, and Friday 12-12:30pm in MLC

**Lectures.** TuTh 10:00-11:20am in Library W4535.

**Blackboard.** Grades and some course administration will take place on Blackboard. Please login using your NetID at <http://blackboard.stonybrook.edu>. The course website is <http://www.math.stonybrook.edu/~rradu/MAT324FA16>. Please check regularly for the weekly lecture schedule updates and homework.

**Course Description.** In this course we will discuss Lebesgue measure, Lebesgue integration, metric spaces (including compactness, connectedness, completeness, and continuity), aspects of Fourier series, function spaces, Hilbert spaces and Banach spaces. After developing the basic theory we will also give some applications to Probability. The main results will be the Monotone Convergence Theorem, the Dominated Convergence Theorem, the Radon-Nykodyn Theorem, and the Central Limit Theorem.

**Prerequisites.** C or higher in MAT 203 or 205 or 307 or AMS 261; B or higher in MAT 320.

**Textbook.** The following textbook is required:

Marek Capinski and Ekkehard Kopp, *Measure, Integral and Probability*, 2nd ed., Springer-Verlag, Springer Undergraduate Mathematics Series, ISBN 1-85233-781-8.

Other general references will be posted on the course webpage.

**Exams.** There will be a midterm and a final exam, scheduled as follows:

- Midterm – Thursday, October 25, 10:00-11:20am, in Library W4535.
- Final Exam – Friday, December 16, 11:15am-1:45pm, TBA.

There will be no make-up exams.

**Grading policy.** Grades will be computed using the following scheme:

Homework – 25%

Midterm – 30%

Final Exam – 45%

Students are expected to attend class regularly and to keep up with the material presented in the lecture and the assigned reading. There will be (roughly) weekly homework assignments. You may work together on your problem sets, and you are encouraged to do so. However, all solutions must be written up independently.

**Extra Help.** You are welcome to attend the office hours and ask questions about the lectures and about the homework assignments. In addition, math tutors are available at the MLC: <http://www.math.sunysb.edu/MLC>.

**Information for students with disabilities.** If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748, or at the following website <http://studentaffairs.stonybrook.edu/dss/index.shtml>. They will determine with you what accommodations, if any, 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 is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at <http://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 University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.