

*This syllabus contains the policies and expectations that the instructor has established for this course. Please read the entire syllabus carefully before continuing in this course. These policies and expectations are intended to create a productive learning atmosphere for all students. Unless you are prepared to abide by these policies and expectations, you risk losing the opportunity to participate further in the course.*

**Instructor:** Dr. Matthew Badger ([matthew.badger@uconn.edu](mailto:matthew.badger@uconn.edu))

Office: Math Sciences Building 204

Office Hours: Tuesday 1:30 – 2:30, Wednesday 10:00 - 11:00, and by appointment

### Course Description

This purpose of this course is to give students a firm grounding in point-set topology of metric spaces and analysis of a functions of one real variable. Topics will include construction of the real numbers, elementary metric space theory (including point-set topology), compactness and connectedness of sets in  $\mathbb{R}^n$ , convergence of sequences and series, limits and continuity of real-valued functions, differentiation and Riemann integration of functions  $f : A \rightarrow \mathbb{R}$  ( $A \subseteq \mathbb{R}$ ) and the Fundamental Theorem of Calculus, the Arzela-Ascoli Theorem, and the Stone-Weierstrass Theorem.

### Required Resources

- **Course Webpage:** [www.math.uconn.edu/~badger/](http://www.math.uconn.edu/~badger/) → Link to Math 4110/5110
- **Textbook:** Walter Rudin, *Principles of Mathematical Analysis*, 3rd Edition, McGraw-Hill.

### About Attendance

Students are expected to regularly attend lectures, which may include material that cannot found in the textbook.

### Graded Components

- **Homework**  
Weekly homework assignments will be due in class on most Thursdays, starting on Thursday, September 4. The homework assignments will be posted on the course webpage.
- **Midterm Exam**  
There will be one closed book, closed notes midterm exam in class on Tuesday, October 7th from 11:00 am - 12:15 pm.
- **Writing Portfolio**  
In lieu of a second midterm exam, each student will compile a portfolio demonstrating excellence in mathematical writing. Details will be provided to students following the midterm exam.
  - DRAFT of portfolio is due in class on Thursday, November 13th.
  - PORTFOLIO is due in class on Thursday, December 4th.
- **Final Exam**  
There will be one closed book, closed notes final exam as scheduled by the university on Tuesday, December 9th from 10:30 am - 12:30 pm.

The *final grade* for the class will be based on your course average (see below) and participation. Grades will not be curved. Certain averages will guarantee the following grades:

$\geq 90\%$  guarantees an ‘A’ and  $\geq 70\%$  guarantees a ‘B’.

Your *course average* will be determined by the highest of the following two calculations:

- Calculation 1: 25% Homework + 15% Midterm + 25% Writing Portfolio + 35% Final Exam
- Calculation 2: 25% Homework + 25% Writing Portfolio + 50% Final Exam

**Disability Support Services**

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Center for Students with Disability:

(<http://www.csd.uconn.edu/>).

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 Community Standards. For more comprehensive information on academic integrity, please refer to the Undergraduate Academic Integrity Policy:

(<http://community.uconn.edu/the-student-code-appendix-a/>).

**Syllabus Revision**

The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be by announcement in class and changes to this syllabus will be posted on the course website.