

**General features:**

- The official book is the 3rd edition of “*Principles of Mathematical Analysis*” by W. Rudin
- 12 homeworks (due on most Fridays) 30% total.
- A computer projects (due Friday, April 26): 10%.
- 2 midterms (WEDNESDAYS, FEBRUARY 28 AND APRIL 17): 15% each.
- 1 comprehensive final exam (FRIDAY, MAY 3): 30%.

**Exams are your individual effort; with homeworks and the computer project you are welcome to use any help whatsoever. All exams are closed book/no notes or on-line resources.**

## Weekly schedule

### Week 1.

Main topic: Review of algebra and topology.

Chapters in the book: 1 and 2.

Important date: January 12 (HW1 is due).

### Week 2

Main topic: Continuity and differentiation.

Chapters in the book: 4,5.

Important dates: January 15 (MLK Day, no class), January 19 (HW 2 is due).

### Week 3

Main topic: Continuity and differentiation.

Chapters in the book: 4,5.

Important date: January 26, which is the due day for HW 3 and is last day to drop the class **without** a “W” and **with** refund).

### Week 4

Main topic: Riemann integration.

Chapter in the book: 6.

Important date: February 2 (HW 4 is due).

### Week 5

Main topic: Sequences and series.

Chapters in the book: 3,7.

Important date: February 9 (HW 5 is due).

### Week 6

Main topic: Sequences and series. Chapter in the book: 3,7.

Important dates: February 16 (HW 6 is due).

### Week 7

Main topic: Special functions.

Chapter in the book: 8.

Important dates: February 19 (Presidents Day, no class),

February 23, which is the due day for HW 7 and the last day to drop the class **without** a “W” but **without** refund).

### **Week 8**

Main topic: Exam 1.

Chapter in the book: 3–8.

Important date: February 28 (Exam 1).

### **Week 9**

Main topics: Fourier series.

Chapter in the book: 8.

Important date: March 8 (HW 8 is due).

### **Week 10**

Main topic: Multivariable differential calculus.

Chapter in the book: 9.

Important date: March 22 (HW 9 is due).

### **Week 11**

Main topic: Multivariable integral calculus.

Chapter in the book: 10.

Important date: March 29 (HW 10 is due).

### **Week 12**

Main topic: Lebesgue integral.

Chapter in the book: 11.

Important date: April 5, which is the due day for HW 11 and the last day to drop the class **with** a “W”.

### **Week 13**

Main topic: Fourier transform.

Chapters in the book: 8, 11.

Important date: April 12 (HW 12 is due).

### **Week 14**

Main topic: Exam 2.

Chapters in the book: 8–11.

Important date: April 17 (Exam 2).

### **Week 15**

Main topic: final review.

Chapters in the book: 1–11.

Important date: April 26 (Computer project is due).

**Final exam is Friday, May 3, 8–10am.**