

# Real Analysis - MST 311 - Spring 2018

Spring 2018

## Instructor Information

### Instructor

Hussein Awala

### Email

awalah@wfu.edu

### Office Location & Hours

351 Manchester Hall  
MTW 3:30pm - 4:30pm  
or by appointment

## General Information

### Description

This course is a first course in real analysis, the study of functions on the real line. It will depend on your knowledge of one-variable calculus, but in this course, we will be studying the rigorous notions and proofs that underlying the usual ideas of calculus. Our course will discuss the nature of the real line, sequences and series, continuity and differentiability, and sequences and series of functions. If time permits we will also discuss integration. This course will comprise the first six to seven chapters of the text.

### Required Text

Understanding Analysis, 2<sup>nd</sup> Edition, Stephen Abbott, ISBN: 978-149392711-1.

### Student Learning Outcomes:

- Understanding of the concept of convergence for both sequences and functions (and sequences of functions)
- Facility with the concepts of calculus at a high degree of mathematical rigor.
- Proficiency in the construction of mathematical proofs involving these concepts.

## Exam Schedule

Date	Exam
Friday March 2, 2018 (class time)	Exam 1
Wednesday March 28, 2018 (class time)	Exam 2
Wednesday April 25, 2018 (class time)	Exam 3
Take Home Final Exam	Final Exam

## Additional Information and Resources

### Attendance:

Attendance is required. If you miss a class you are responsible for any material or announcements covered during lecture. If you miss more than 3 classes without a proper excuse your grade might suffer a penalty.

### Exam Policy:

Makeups for midterms is possible if you give appropriate notice before the exam scheduled date and only for a valid and documented reason.

### Assignments and grading:

**Assignments:** This course will emphasize the creation and proper writing of mathematical proofs. It will also challenge your intuition with examples of what may go wrong, and why our definitions and proofs are formulated as carefully as they are. For this reason, it is crucially important that you work to develop your intuition and proof-writing skills by doing regular homework. I strongly recommend that you do every problem in the sections that we cover. Each week, I will assign a few problems for you to write up and turn in. Homework problems will be due on Wednesdays one-to-two weeks after assigned, and can be corrected and resubmitted once on the Wednesday three-to-four weeks after originally assigned.

Grading:

Midterms: 20 % each

Final-Take Home: 20%

Homework: 10%

Class participation/group work: 10%

### Getting Help:

Come to my office hours or email me to set up an appointment to get additional help. The Math Center is also a great resource available for you.

### Disability:

Wake Forest University provides reasonable accommodations to students with disabilities. If you need an accommodation, you are encouraged to contact me privately as early in the term as possible. Retroactive accommodations will not be provided. Students requiring accommodations must also consult the Learning Assistance Center and Disability Services Office (117 Reynolda Hall, 336-758-5929, lac.wfu.edu).

### Honor Code

It is expected that each student in this class will conduct himself or herself within the guidelines of the WFU Honor Code. All academic work should be done with the high level of honesty and integrity that the university demands.

### University/personal emergencies:

The requirements stated on this syllabus may be revised if classes are cancelled for an extended period of time due to weather, emergency or illness.

### Hazardous Weather Policy:

If hazardous weather occurs please take notice of any university announcements concerning schedule changes. Any additional schedule changes specific to our class will be posted to Sakai. Please check the Sakai site regularly on these days.