MATHEMATICS 319 - Section 101

Introduction to Real Analysis

September-December 2025 (2025WT1)

Acknowledgement

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xʷməθkʷəy̓əm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next.

Course information

A rigorous introduction to the ideas and methods of real analysis and their application.

Instructor

- instructor = Andrew Rechnitzer with help from Adam Martens
- email = send through Canvas.
- office hours = there will be weekly office hours - see the course webpage

Class time and location

- class time = TuTh 9:30am-11:00am
- class location = BUCH A103
- First day of teaching: Tuesday September 02
- Last day of teaching: Friday December 05
- So first lecture of m319 is September 04 and last is December 04.
- University closed on
    - Tuesday 30 September (National Day for Truth and Reconciliation)
    - Monday 14 October (Thanksgiving Day) and
    - Monday-Wednesday 10-12 November (Remembrance Day and the midterm break)

Course webpage

- The course webpage is on Canvas

Prerequisites

- a grade of 68% or higher in MATH 220, or
- a grade of 55% or higher in one of MATH 223, MATH 226.

Topics

The course will cover * Real numbers * Suprema and sequences * Continuity and derivates * Metric spaces

Proofs are an essential part of the course material; correct and clear presentation of proofs will be emphasised throughout the course.

Text

There is no required textbook for this course, however there are a set of online course notes here. * The notes also contain some recommended resources

---

Assessment

Breakdown of marks

- 15% Homework - one each week
- 5% Stretch-homework - one each week
- 20% Midterm - Thursday October 16th during regular class time.
- 60% Exam - in the December exam period

Homework

- See the course webpage for details
- I expect to give around 10 or 11 homework assignments.
- Homework will be posted on Fridays and due on Thursdays at 11pm (ie around 6 days later)
- I will not accept late homework.
- There will be no “make up” homework.
- Instead your homework score will be taken from the best 8 homework assignments.
- Note that if you miss a significant number of homework assignments due to valid reasons then part of the weight of the homework will be put onto the exam.

Stretch Homework

- See the course webpage for more details
- These will be released and due on the same schedule as the regular homework.
- They will be marked for participation only.

Presentation of homework

- One of the goals of Mathematics 319 is to learn how to present and communicate mathematics precisely and correctly.
- Accordingly handwritten or messy homework will not be accepted.
- **Homework must be typeset and submitted as a PDF through Canvas**.
- I recommend that you use latex to prepare your homework
- I recommend using Overleaf (which you can do free of charge) or (if you feel up to the challenge) installing it on your own computer.
- You could also try typst, but we cannot offer tech support for it.

Midterm - October 16th

- See the course webpage for details
- It will be held during regular class-time.
- It will be 60 minutes long (though this may be changed closer to the time).
- It will cover all topics done in class up until that point in the term unless otherwise specified.
- Note - there is no “make up” midterm - if you miss the midterm due to valid reasons, the weight of the midterm is passed onto the exam.

Exam

- See the course webpage for details
- It will cover all topics done in class unless otherwise specified.
- The exam will be held in the usual December exam period.
- As is normal for UBC, the precise time and location of the exam will not be released until around mid-October.

General syllabus information

The Mathematics Department has standard syllabus information. This includes standardised policies for * academic concessions (ie missed homework + midterm) * academic integrity (ie cheating) * registration issues (I have no control over anything to do with registration) * misc student resources

You can find that information here