

Real Variables II - Math 321

Spring 2019

- **Instructor:** *Malabika Pramanik*
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- **Phone:** (604)822-2855
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- **Office hours:** *To be announced on the course website.*

- **Web page :** The course website is

<http://www.math.ubc.ca/~malabika/teaching/ubc/spring19/math321/index.html>

Homework assignments and all relevant course information (such as changes to office hours if any, or solutions to homework problems if needed) will be posted here.

- **Text :** *Principles of Mathematical Analysis (third edition)* by W. Rudin.
- **Other references :**
 - *Mathematical Analysis*, by Tom M. Apostol.
 - *Real Analysis*, by Neal Carothers.
 - *Introduction to real analysis*, by William F. Trench. This book is freely available online.
- **Lectures :** Mon, Wed, Fri 9-10 am in Leonard S. Klinck Building, Room 460.
- **Prerequisites :** Math 320.

- **UBC Course description :**

- The Riemann or Riemann-Stieltjes integral
- Sequences and series of functions, uniform convergence
- Approximation of continuous functions by polynomials
- Fourier series
- Functions from \mathbb{R}^m to \mathbb{R}^n
- Inverse and implicit function theorems

These topics are contained in Chapters 6-9 of the textbook.

- **Course Policies :**

- Homework problems will be posted weekly on the course website, and collected at the beginning of class every Wednesday. Writing proofs is an integral component of this course, and as such homework solutions should be carefully prepared with special attention to detail and mathematical rigour. Answers should be clear, legible and in complete English sentences.

- Late homework submissions will not be accepted. However your two worst homework grades will be dropped.
- You are encouraged to discuss homework problems with each other. However, the solutions that you write up should be entirely your own.
- Occasionally, a set of practice problems may be provided to supplement the material being taught in class. You do not need to hand in the solutions to these problems, but it is strongly recommended that you work through them. Exam questions will be largely modelled on these problems.
- The class discussion platform is an online resource called Piazza, which you may have already used in Math 320. This is a forum for the students to discuss mathematics with each other, with some input from the instructor or the TA. The access code for subscribing to Piazza will soon be mailed to you.
- In addition to homework, there will be *two midterms and a final exam*. The midterms will be 50 minutes long and held during class time on **Friday February 1 and Friday March 15**. Your total score will be a weighted average of your homework, midterm and final scores, with the breakdown as follows.

Homework	20%
2 midterms	$15 + 15 = 30\%$
Final exam	50%

- The midterm and final exam will be strictly closed book; no formula sheets or calculators will be allowed.
- Missing a midterm normally results in a score of 0. Exceptions may be granted in two cases: prior consent of the instructor or a medical emergency. In the latter case, the instructor must be notified within 48 hours of the missed test and be provided with a doctor's note immediately upon return to UBC. If the instructor approves, the weight of the midterm will be transferred to the final. *Please note that no more than one midterm weight can be shifted to the final.* A student who misses both midterms will fail the course, regardless of their performance in the final exam.
- The final exam date for this course is currently unavailable, but will be released during the term. *Do not make travel plans until the final exam schedule has been announced.*