

Functional Analysis - Math 421/510

Spring 2018

- **Instructor:** *Malabika Pramanik*
 - **Office:** *Mathematics Building, Room 214*
 - **Phone:** *(604)822-2855*
 - **Email:** *malabika@math.ubc.ca*
 - **Office hours:** *To be announced.*
 - **Marker/TA:** *Tongou (Thomas) Yang*
 - **Marker/TA Email:** *toyang@math.ubc.ca*
- **Web page:** The course website is
<http://www.math.ubc.ca/~malabika/teaching/ubc/spring18/math420-510/index.html>
- Homework assignments and all relevant course information (such as changes to office hours if any, or solutions to quiz and homework problems) will be posted here.
- **Text:** *Real Analysis: Modern Techniques and Their Applications*, by Gerald Folland. This is the same textbook as in the earlier course in this sequence Math 420/507. Supplementary material may be found in “A first course in functional analysis” by John B. Conway, and “Functional Analysis” by Peter Lax.
- **Pre-requisite:** Math 420/507 (or equivalent).
- **Course outline:** The UBC course description is as follows:
- Banach spaces
 - Linear operators
 - Bounded and compact operators
 - Strong, weak, and weak* topology
 - Hahn-Banach, open mapping, and closed graph theorems
 - Hilbert spaces
 - Symmetric and self-adjoint operators
 - Spectral theory for bounded operators.
- The core topics of this course are contained in Chapters 5, 6 and 7 of the textbook. Time permitting, we will also consider other special topics.
- **Lectures:** Tuesday and Thursday 11 am - 12:30 pm in Mathematics 203.
- **Grading Policy:** Homework problem sets, due every other week, will be posted regularly on the course website. In addition, there will be a take-home final exam, and a weekly short quiz at the end of class every Thursday, starting January 11. Your total score will be a weighted average of your homework, quiz and final scores, with the breakdown as follows.

Homework	25%
Quizzes	25%
Final exam	50%