Functional Analysis - Math 421/510

Spring 2009

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- ***Office hours: By appointment.***

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

http://www.math.ubc.ca/~malabika/teaching/ubc/spring09/math421-510/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 :** *A Course in Functional Analysis* by J. B. Conway.

• **Course outline :** The core topics of this course are

- Banach spaces
- Operator spaces; strong, weak, and weak* topologies
- Hilbert spaces and their geometry
- Operators on Hilbert spaces: self-adjoint, bounded, compact
- Hahn-Banach Theorem
- Open Mapping Theorem
- Closed Graph Theorem
- Spectral Theory for Bounded Operators
- Fredholm Theory for Bounded Operators

Time permitting, we will also consider other special topics.

• **Lectures :** Monday, Wednesday, Friday 9-10 am in Room 1102 Math Annex.

• **Grading Policy :** Homework problems will be posted regularly on the course website. In addition, there will be a takehome midterm and a takehome final. You total score will be a weighted average of your homework, midterm and final scores, with the breakdown as follows.

Homework	50%
Midterm	25%
Final exam	25%