Mathematics 530
COURSE OUTLINE
Department of Mathematics and Statistics
University of Victoria
January 2018

INSTRUCTOR

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CLASS WEB SITE

We will use the **Course Spaces** system.

OFFICE HOURS

TBA. I will try to set some times that work for everyone.

TEXTBOOK

Gerald Folland, **Real Analysis, Modern Techniques and Their Applications, Second Edition**. The First Edition of this text would also work.

SYLLABUS

The syllabus is organized around topics needed to prepare students for the Ph.D. Comprehensive Exam in Analysis including:

Measures: sigma-algebra, measure, outer measure, Caratheodory theorem, examples
Integration: measurable function, integral, convergence theorems, product measure
Differentiation: Signed and complex valued measure, Radon Nikodym, Lebesgue differentiation
Topology: Compact topological spaces, Arzela-Ascoli, Tychonoff and Stone-Weierstrass
Functional Analysis: Normed vector spaces, linear operators, results related to Baire category
Banach Spaces: L^p spaces. Duality and dual of L^p,
Dual of $C(X)$: Radon measures and Riesz representation.

METHOD OF EVALUATION

Six homework assignments will count for 60% of your grade. Assignments will be distributed approximately every second Wednesday, to be due the following Friday. The remaining 40% of the course grade will be earned on a 3-hour final examination on the University's schedule.

COURSE POLICIES

General departmental policy on graduate level courses can be found on our website. Click on 'Current Students' then on 'Graduate', and finally on 'Course policies' in the sidebar. Or cut and paste the following link into your browser:

`http://www.uvic.ca/science/math-statistics/current-students/graduate/course-policies/index.php`

A supplementary policy document that includes grading information can be found at:

`https://connect.uvic.ca/sites/science/math/instructors/Course%20Outlines/Course_Outline_Policy_Graduate.pdf`

By registering and participating in this course, it is assumed you have read and understood these policies.