Math 420—Outline

Instructor: Alexia Yavicoli, MATH 110, yavicoli@math.ubc.ca

Office hours: Mon noon-1pm, and Wed and Fri 12:50am-1:50pm in my office (MATH110)

TA Office Hours: Thursdays 3-5 PM in MATX1118.

Website: the course Canvas page

Class schedule: Mon Wed Fri, 11-11:50 am in MATH204

References: the main textbook for this course is

- G.B. Folland, Real Analysis: Modern Techniques and Their Applications.

See the course page for a list of additional references. Slides/notes will be posted. Solution to the homework assigments will be posted.

Attendance is not mandatory, but recommended.

Topics: roughly the first 3 chapters of Folland. In brief,

- Ch.1: sigma algebras, outer measures, measures; Lebesgue measure
- Ch.2: measurable functions, integration; Lebesgue integral; convergence of functions, convergence theorems
- Ch.3: Radon-Nikodym theorem; differentiation
- Ch.6.1: introduction to Lp spaces

If time allows, we'll discuss Hausdorff measures at the end.

Evaluation: grades, which may be scaled, will be based on

- written homework assignments: 50
- final exam (scheduled in the exam period): 50

Homework: will be assigned regularly (esentially every 2 weeks). Late submissions will not be accepted. You are encouraged to discuss the homework with other students, but you must write the solutions on your own. Submissions should be typed on Latex (students with accomodation are allowed to submit pictures).

Missed work: will, in general, be given a grade of zero. If you are unable to submit a problem set on time, and if you (a) have a legitimate excuse and supporting documentation (e.g., a medical certificate in the case of an illness), and (b) notify me as soon as possible, we can arrange either to base your course mark on other work (re-adjust the percentages), or to make up the missed work.

Final: The final exam will be 2.5 hour long (standard length at UBC). Attendance at the final examination is required, so be careful about making other committments (such as travel) before this date is confirmed. The examination will be strictly closed-book: no formula sheets, calculators, or other aids will be allowed.