

CARLETON UNIVERSITY
SCHOOL OF MATHEMATICS AND STATISTICS

MATH 4106/5106 Topics in Group Theory Winter 2020

Preliminary COURSE OUTLINE

This course is an introduction to geometric group theory. We shall study infinite groups by looking at their 'nice' actions on 'nice' spaces.

TOPICS include Free groups, Group presentations, Cayley graphs of groups, Quasi-isometries, Hyperbolic groups, CAT(0) groups,...

Recommended Reading:

- *A course on Geometric Group Theory*, by B. Bowditch,
- *Metric Spaces of Non-positive Curvature*, by M. Bridson and A. Haefliger,
- *Office Hours with a Geometric Group Theorist*, edited by M. Clay and D. Margalit,
- *Géométrie et théorie des groupes: Les groupes hyperboliques de Gromov (French)*, by M. Coornaert, T. Delzant and A. Papadopoulos.

Lectures: Tuesday and Thursday 4 - 5:30 pm, room DT 1006. Lectures begin on January 7 (Tuesday) and end on April 7 (Tuesday).

Evaluation. Your final grade for the course will consist of

- (1) **Assignments 20%**
- (2) **Presentations 50%**
- (3) **Final Examination 30%**

Prerequisites: MATH 2100 or MATH 2108 should suffice in terms of the required background knowledge. However, the more you know about groups and about proofs the better.

Course Instructor: Dr. Inna Bumagin

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