

MATH 494 (MAST 699/833), Sec. A
Topics in Pure & Applied Math
Fall 2018

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Office Hours: By appointment.

Objective: This course aims to cover the basic material related to the étale fundamental group of a connected scheme relative to a geometric point and to give a taste of the applicability of the theory via some examples (both classical and recent).

References: No textbook, main references SGA 1.

Final Grade: "Take-home" exam: 100%.

If the grading scheme for this course includes graded assignments, a reasonable and representative subset of each assignment may be graded. Students will not be told in advance which subset of the assigned problems will be marked and should therefore attempt all assigned problems.

Content: Topics to be covered:

- Prerequisites in commutative algebra;
- The topological fundamental group
- The Galois group of a general Galois extension of a field
- Fiber functors and Tannakian categories
- Étale covers of a scheme
- The étale fundamental group of a scheme

Academic Integrity and the Academic Code of Conduct

This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly. "Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia's website on academic integrity can be found at the following address, which also includes links to each Faculty and the School of Graduate Studies: concordia.ca/students/academic-integrity." [*Undergraduate Calendar, Sec 17.10.2*]