

Math 5117 Course Outline

Fall 2024

Instructor: A.J. Dean, **email:** andrew.j.dean@lakeheadu.ca

Office hours: Mondays and Wednesdays 2:30pm to 3:30pm. RB 2009.

References:

Topology, 2nd edition, by James R. Munkres, Prentice-Hall, Upper Saddle River, New Jersey, 2000.

General Topology, by Stephan Willard, Dover Publications, Mineola New York, 1998.

Algebraic Topology: An Introduction, by W.S. Massey, Springer-Verlag, New York, Heidelberg, Berlin, 1967.

Learner Outcomes: Successful students of this course will be able to: Understand and explain homotopy of paths and the definition of the fundamental group of a topological space; understand and explain the definition of a covering and its relationship to the fundamental group, and how it is used in computations; explain classical separation theorems in the plane, such as the Jordan Curve Theorem and the Cauchy Integral Formula; Use the Siefert-van Kampen Theorem to compute fundamental groups; understand the classification of covering spaces; and apply coverings space and fundamental group results to group theory.

Marking Scheme: Grades will be based on weekly assignments. There will be 10 of these. They will be weighted equally.

Drop Date: The final date to withdraw from this course without academic penalty is Friday November 8.

Academic Dishonesty: All cases of academic dishonesty will be dealt with according to the university's Academic Integrity Code.

Accommodations: Lakehead University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. if you think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) and register as early as possible. For more information, please visit: <http://studentaccessibility.lakeheadu.ca>