Math 5119 Course Outline
Fall 2023

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

Office Hours: Tuesday's 2:30-4:30, or by appointment or happenstance.

Text: *Abstract Algebra*, David S. Dummit and Richard M. Foote, Prentice Hall, New Jersey. (Note: This book is available from the Lakehead Library.)

Learner Outcomes: After successfully completing this course, the student will be familiar with various classes of common groups, including, but not limited to: cyclic, dihedral, symmetric, alternating, quaternion, free, nilpotent, and various matrix groups; they will understand the relationships between groups and between groups and other objects, including: homomorphisms, isomorphisms, automorphisms, and group actions; they will know and be able to use structure theorems, including the Sylow theorems and the Fundamental theorem of finitely generated Abelian groups; they will be familiar with various common rings, such as polynomial rings, matrix rings, rings of fractions, Euclidean domains, principal ideal domains, and group rings; they will understand quotient structures, including quotient groups and rings, Lagrange's theorem, the isomorphism theorems for both groups and rings; and they will understand and be able to use the basic constructions and theorems of module theory.

Grading Scheme: There will be weekly assignments, which will account for 75% and a final exam, which will account for the remaining 25%.

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