

Math 1272 Course Outline

Instructor: A. Dean , RB 2009, ext 8689. email: andrew.j.dean@lakeheadu.ca

Office Hours: Fridays 1:30-3:30 or by appointment or happenstance.

Text: *Mathematical Proofs, a Transition to Advanced Mathematics*, G. Chartrand, A. Polimeni, and P. Zhang, 2nd edition, Pearson Education, Boston.

Schedule

Week 1. (January 6 and week of January 9) Introduction and basic set theory.

Week 2. (January 16) Logical connectives, truth tables, and quantifiers.

Week 3. (January 23) Direct proofs and proofs by contrapositive.

Week 4. (January 30) Further examples of direct proofs and proofs by contrapositive.

Test # 1 on Friday February 3

Week 5. (February 6) Existence proofs and proofs by contradiction.

Week 6. (February 13) Mathematical induction.

Study Week February 20-24

Week 7. (February 27) More on induction.

Test # 2 on Friday March 2

Week 8. (March 5) Relations.

Week 9. (March 12) Functions.

Week 10. (March 19) Cardinality.

Test # 3 on Friday March 23

Week 11. (March 26) Examples from number theory.

Week 12. (April 2) Examples from calculus.

Grading Scheme: There will be three term tests worth 15% each. The homework will count for 15%, and the final exam will be worth 40%.

Homework: Each week, a homework assignment will be circulated by email. They will be due at 4pm on Wednesday afternoons, unless otherwise announced in class. There will be a box for these on the second floor of the Ryan Building. Shortly after 4pm on Wednesdays, the mailbox will be emptied, and it will not be examined again until the next week. Late assignments will not be accepted. Solutions to the problems will be distributed by email.

Term Tests and Final Exam: The three term tests will be held during the lab hour in the lab room (the dates are on the schedule). They will be **closed book** with **no calculators or other aids allowed**. The material the tests will cover will be announced

in class as the dates draw near. **The final exam will also be closed book with no calculators or other aids allowed.** The final exam will cover the whole course.

Marking Disputes: If you feel you have been treated unfairly in the marking of a test or assignment, **put your complaint in writing on the front of the paper and return it to the instructor.** Do not put it back in the assignment box.

Drop Date: The final date to withdraw from this course without academic penalty is Wednesday March 7.

Special Exams: Students who fail this course but attain a mark of 40% may be entitled to write a special exam. See the calendar for details.

Academic Dishonesty: All cases of academic dishonesty will be dealt with according to the university's Code of Student Behaviour and Disciplinary Procedures, copies of which are available from the registrar.