PURE MATHEMATICS 3370
FALL 2005

Instructor: Dr. D. Rideout, HH-3037, 737-8073

Text: *Pure Mathematics 3370 Course Notes*, by Donald E. Rideout, Fall 2004

Evaluation: 10% Assignments, 30% Midterm Test, 60% Final Exam

Outline

1. Primes and Perfect Numbers.
2. Divisibility.
3. Primes.
4. Congruences.
5. Linear Congruences and the Chinese Remainder Theorem.
6. The Groups $(\mathbf{Z}_m^*, \cdot)$.
7. Cryptology.
8. The Diophantine Equations $x^n + y^n = z^n$.
9. Gaussian Integers.
10. A brief introduction to quadratic fields and integers.

Important Dates

September 21 (Wednesday)	Last day to add courses.
	Last day to drop courses and receive a 100% refund of tuition fees.
October 10 (Monday)	Thanksgiving Day. No lectures.
October 10, 11	Fall Semester Break. No lectures.
October 12 (Wednesday)	Classes will follow the Monday timetable.
October 13 (Thursday)	Classes will follow the Tuesday timetable.
October 24 (Monday)	**Midterm Test.**
October 26 (Wednesday)	Last day for students to drop courses without academic prejudice.
November 11 (Friday)	Remembrance Day. No lectures.
December 2 (Friday)	Last day of lectures.
December 7-16 (inclusive)	Examination period.

Notes

- Number Theory is the mathematical treatment of questions related to the ordinary integers $0, 1, 2, 3, \cdots$. It is by far the best subject area to teach what constitutes a mathematical proof and how to construct proofs. For many students, learning how to write proofs is the hardest part of mathematics, and the main purpose of this course is to attempt to overcome this difficulty. The material is presented systematically through definition, theorem and proof, and students are expected to know these proofs. There will be lots of opportunity to write proofs on tests and on assignments.

- Attendance will be taken and used at the end of term in making decisions such as rounding off marks and in deciding borderline cases.

- Homework assignments will be given usually once a week, and must be handed in at the <u>start</u> of class on the due date. Late assignments will not be marked.

- Office hours (HH-3037) will be on Tuesdays and Thursdays from 10:15–11:15, Wednesday 3:00–4:00, and Friday 9:00–10:00. You can always email me **drideout@math.mun.ca** with your questions and to make appointments. See my home page **http://www.math.mun.ca/~drideout/** for assignments and sample tests etc.