1. Contact Information

The instructor for this course is me, Ben Williams. I may be reached at tbjw@math.ubc.ca. I try to reply to all student email within 24 hours.

The course website is http://www.math.ubc.ca/~tbjw/342/index.html.

Office Hours:

Provisionally these will be held
- Tuesdays 3:00-4:30
- Thursdays 11:00-12:30

in LSK 300.
If you have administrative (not directly math related) difficulties, you may also discuss these with me after class or at other times, by arrangement.

2. Meeting Times

The course meets at the following times:
- Tuesdays 9:30-10:50
- Thursdays 9:30-10:50

always in LSK 460.

3. Textbook

The textbook for this course is *A First Course in Coding Theory* by Raymond Hill.

4. Homework

Homework will be assigned throughout the course, at a rate of approximately one assignment every two weeks. Your lowest homework score will be dropped from all grade calculations.

The first assignment will be due on Thursday 15 January, at the start of class.

5. Midterm Exams

There will be two midterm exams. I reserve the right to change the time of these exams, but they will most likely happen in class on the 5th of February and again on the 5th of March.
6. Overall Course Grade

The overall course grade will be made up from 10% homework, 30% midterms and 60% final exam. No extensions will be given for homework under any circumstances. Students who are unable to take the midterm exams should contact me beforehand in order to make alternate arrangements. Students who suffer serious injury or illness or bereavement during the course should contact me as well.

7. List of Topics

The following is a list of topics that will be followed, and in the order given. The chapter of the textbook is also given, where applicable:

Week 1
   1 Introduction
      • Proof skills measurement (not for marks)
Week 2
   2 Main Coding Theory Problem
      • Groups
Week 3
   • Groups (continued)
   • Abelian Groups
Week 4
   • Modular Arithmetic
   • Midterm 1
Week 5
   3 Finite Fields
   4 Vector Spaces over Fields
Week 6
   • More Vector Spaces over fields
Week 7

5-6 Linear Codes
Week 8
   7 Generator and Parity Check Matrices
   • Midterm 2
Week 9
   7 Generator and Parity Check Matrices
   7 Syndrome decoding
Week 10
   • Galois Fields
Week 11
   • More Galois Fields
   9 Perfect Codes
Week 12
   10 Cyclic Codes
Week 13
   8 Hamming Codes
   • TBD