Math 322: Introduction to Algebra

Instructor: Julia Gordon
Office: Math 217
e-mail: gor at math.ubc.ca

Text: D.S. Dummit, R.M. Foote, " Abstract Algebra".

Course outline: We will cover approximately Chapters 7–10 and 12 of the textbook. The first half of the course will focus on rings. We will talk about ideals and quotient rings, and then about important classes of rings, such as principle ideal domains (PIDs) and unique factorization domains. Polynomial rings will be an important example. In the second half of the course, modules will be introduced. We will talk about torsion modules and free modules, and discuss submodules, direct sums, and tensor products of modules. The course will end with classification of modules over a PID, and its applications, in particular, to classification of finite Abelian groups, and, time permitting, to Jordan canonical form of a linear operator.

Evaluation: Course mark will be based on the homework (20%), one midterm and the final exam. The final and midterm scores will be weighted at 30%-50% or 35%-45%, whichever gives you a better mark. Late homework will not be accepted.