Math 107: Explorations in Mathematics
Syllabus, Fall 2011

Professor: **Dr. Jason Parsley**
Office: 330 Manchester Hall
Office hours: MW 3:15-4, W 12-1, Th 2:30-3:30 (preference to 311), Th 3:30-4:30 (preference to 107); and also by appointment
Email: `parslerj AT wfu.edu`

1. Course Time & Location: MWF 2-3:15, Manchester 125
we will meet 200 out of these 225 minutes each week.

2. Texts:

a) Tannenbaum, Excursions in Modern Mathematics, 6th ed.
b) Adams, *The Knot Book*
c) Abbott, *Flatland*

3. Topics: Our plan is to do 7 different two-week topics. The rough starting date and chapter (in Tannenbaum) is listed for each one.

	Topic	Chapter	Start
1	Graph theory	5-6	Sept. 2
2	Number theory	(notes)	Sept. 14
3	Voting	1	Sept. 26
4	Weighted voting	2	Oct. 10
5	Geometry	(notes)	Oct. 24
6	*tbd*		Nov. 7
7	*tbd*		Nov. 28

We will, as a class project vote on the remaining two topics, chosen from the following list:

- Fair Division (ch. 3)
- Apportionment (ch. 4)
- more Graph Theory (ch. 6-7)
- Fractals (ch. 12)
- Statistics (ch. 13)
- Probability (ch. 15)
- more Knot Theory (Adams)

We will spend roughly 75% of our time each week on the topics above. We will take frequent *knot breaks* to talk about Knot Theory.

4. Teaching Assistant: We are fortunate to have **Joseph Paat**, a mathematics graduate student, as the teaching assistant for math 107. He will grade papers, hold a Thursday evening help session (probably Thursday 7-9pm), and occasionally help out in class.

5. Attendance Quizzes: Each day (other than test days), we will spend the first 2-5 minutes with some short, simple 'quiz'. These are graded out of 5 points on the following scale: $\checkmark- = 4$ pts; $\checkmark = 5$ pts; $\checkmark+ = 6$ pts (rare); unhappy face = 2-3 pts (hopefully more rare). By my count, there are 37 days; your lowest 3 scores will be dropped. These quizzes cannot be made up, even if you are merely late for class.

6. Homework: Working problems, both individually and together, is fundamentally important in learning mathematics well. Written assignments will be due on **Fridays** at the start of class. Late work is discouraged; each day late earns a 10 point deduction from your score; no work over 3 days late is accepted. I'm willing to work with you – if there are circumstances which will not allow you to submit homework on time, let me know and we can work something out.

The written homework should be neatly written using proper English grammar. I anticipate using the following grading system: most graded problems are worth 3 points; problems which are ungraded are checked for 'completeness' – whether you have made an honest attempt; these are worth 10 points total.

Academic integrity is something I take quite seriously. Here are my expectations: you may discuss course material freely with each other. The written assignments that you submit must be your original work, i.e., when writing your solutions, you should be working independently, not together.

7. Tests and Final Exam At the end of every other topic, we will have a 30-minute quiz.

- 1st test: F., Sept. 30
- 2nd test: W., Oct. 26
- 3rd test: M., Nov. 21 (n.b., Thanksgiving week)

The final exam will be Th., Dec. 15, 2-5pm.

8. Projects and Group Work. Many topics will include some sort of project, group work, or collaboration. Some will utilize Sakai. For instance, in the third topic you will conduct an election of your own and determine who wins via different voting systems. Under the fifth one (geometry), you will read *Flatland* and create your own follow-up. You will also have a 'pet knot'.

9. Grade Calculation:

Attendance Quizzes	15%
Homework	20%
Tests	20%
Projects and Group work	20%
Final Project	25%

10. Final Exemption: If you satisfy three requirements, the final exam is optional for you.

- Average on Dec. 9 is at least 90.0%
- Test average is at least 85 %
- No more than 2 absences

11. Front Row Seats: Each non-test day, 3 people will be chosen to sit front & center. They will be my helpers for the day's class.

If you have a disability which may require an accomodation for taking this course, please contact the Learning Assistance Center (758 5929), then contact me, within the first 2 weeks of the semester.