Math 130-01: Contemporary Mathematics

Fall, 2007

Instructor: Erin McNicholas email: emcnicho@willamette.edu

Office: Collins, Room 307 Phone: 503-370-6590

Office Hours: M 11-12pm, Tu 1-2:30pm, Th 1-2:30pm

Class Web Site: http://www.willamette.edu/~emcnicho/courses/Contemporary/M130.html

Class Listserv: math-130-01@willamette.edu

Class Meetings: Class meets in Collins 204 every Tuesday and Thursday from 8:00-9:30 am

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Class Objectives/'Big Questions'

How is the study of mathematics a creative venture? How can mathematics help us understand the world around us and the social constructs we live by? In this class we will answer these questions by exploring a number of interesting, contemporary applications. At the same time, we will examine the nature of mathematics and mathematics research.

Topics:

- Mathematics & Social Justice
- Graph Theory & Management Science
- Mathematics of Symmetry & Secrecy

Objectives:

- Strengthen our logic & reasoning skills
- Improve our understanding of what the field of mathematics encompasses
- Become more informed citizens and voters

Required Course Materials:

Excursions in Modern Mathematics, 6^{th} ed., by Peter Tannenbaum

Course Grades:

Grades are based on four components

- 2 Exams (each worth 100 points)

  For each exam, you are allowed one 3x5 index card with notes

- 2 Projects (each worth 75 points)

  You may suggest your own topic with instructor consent, or select a topic from a list posted on the class web site. No two projects can correspond to material covered in the same chapter of the text, and no more than two projects can be done on topics from the same overriding subject area. More information, including grading criteria, will be posted on the class web site. Final projects will be presented on the last day of class in poster form. The winning poster will receive fame, glory, and Bistro Bucks.

- In-Class Activities & Assignments (worth 50 points)
- Final Exam/Final Project (worth 150 points)
- Total Points Possible: 550 points

Course grades will be based on a point system. Grade cut-offs will be determined at the end of the semester with the guarantee that:

- 495 points or more will be at least an A-
- 440 points or more will be at least a B-
- 385 points or more will be at least a C-
- And 330 points or more will be at least a D

Missed Exam Policy:

Students must contact the instructor prior to the missed exam to make arrangements for a make-up exam.

Class Attendance and Cell Phone Policy:

Daily attendance is expected from every student. Students who miss the first day may be administratively dropped from the course. Electronic devices such as cell phones, pagers, i-pods, etc. must be turned off during class meetings. If your cell phone goes off during class you will be responsible for bringing treats for the entire class at the next class meeting. Papers should not be read during class, though I applaud your efforts to stay abreast of current events and tackle the latest crossword or sudoku puzzle.

Academic Integrity:

In accordance with Willamette University CLA catalog: "Plagiarism and cheating are offenses against the integrity of the courses in which they occur and against the College community as a whole... Ignorance of what constitutes plagiarism shall not be considered a valid defense. If students are uncertain as to what constitutes plagiarism for a particular assignment, they should consult the instructor for clarification." Cheating is unethical and I take it very seriously. The Deans Office will be notified if anyone is found cheating and appropriate sanctions will be given.

Student Responsibility:

Most of you already know this, but previous experience has shown that a friendly reminder is sometimes in order :). You are all adults and responsible for your own education. I will do everything in my power to help you learn. You should always feel free to stop by my office or make an appointment to meet with me. You should

also feel free to ask me questions in class. Stop me if you are confused and ask me to explain things again. I welcome student questions! Although I will do everything in my power to help you through this class, you are ultimately responsible for your grade. The following is a list of things I expect from you.

1. THINK CRITICALLY. Your goal in this class should be to understand the concepts and strengthen your mathematical reasoning skills. Mimicing problem solving strategies, or working through processes you don't understand is a waste of your time. Throughout the course you should be asking yourself "Why are we doing this? Why does this method work? How is this related to other topics I've learned?"
2. ASK QUESTIONS & SEEK HELP! Ask questions in class, after class, during office hours, whenever! If you are confused or having problems with a certain section of the material see me AS SOON AS POSSIBLE. I am happy to help you but it is impossible to go over weeks worth of material right before an exam.
3. DO THE ASSIGNMENTS. Mathematics is not a spectator sport. You will only learn mathematics by practicing, that is what homework is for. I encourage you to work with your fellow students on homework assignments. Although these assignments will not be collected, they are designed to help you learn. Not doing the homework will have a negative impact on your exam scores and your final grade.
4. STUDY. You should invest some time and effort into this course. Set aside time for both homework and studying.