

## Math 423 E1U MWF 1 152 Henry Administration Class Organization Fall 2004

**Instructor:** Prof. Bruce Reznick, 327 Altgeld Hall, 333–4284, reznick@math.uiuc.edu. My phone has voice mail and I frequently check and reply to my email, including weekends. Office hours are by appointment. I take them seriously, and they can usually be arranged within 24 hours. You are also encouraged to ask me questions immediately before and during class. I'm terrible with names; don't take it personally.

This course has a webpage – <http://www.math.uiuc.edu/~reznick/math423.html>. This webpage will contain a “class diary”, summarizing what happens in each class period, as well as .pdf links to TeX'd handouts. If you email me a course question, I will post your anonymized question and my reply on the web page, for the benefit of the entire class.

**Text and Syllabus:** The text is *Elementary Differential Geometry* by Barrett O'Neill. The syllabus has been designed by Prof. Stephanie Alexander, and I will be following her organization. The sections covered are: 1.2–1.4, 2.1–2.5, 3.5, 4.1, 4.2, 5.1–5.7, and parts of chapters 6 and 7, with distributed notes. We cover curves and surfaces, not differential forms, in order to get to Gauss' great theorems at the end of the semester.

**Homework Policy:** Written homework will be assigned to be due weekly. Please staple or paper-clip your homework sheets (no folding over corners), and consider writing more than one draft. You are expected to spell correctly and write complete, grammatical sentences when possible in this and all your university assignments. Homework solutions will be distributed when the assignment is due. No late homework is accepted, but the lowest two homework scores (possibly zero) will be omitted in computing your homework average. In rare instances, you may be excused from an assignment, but the dropped scores are intended to cover ordinary illnesses, weddings, etc. **Collaboration in studying and working the homework is strongly encouraged! Collaboration without comprehension is a waste of time.** A phone and e-mail list will be distributed once the class stabilizes. It is my policy not to give specific homework help to individuals before an assignment is due. But if you ask a question in class or in email, I can further explain to *everybody* the mathematics which underlies your question.

Although Math 423 is an undergraduate course, it typically attracts some graduate students, and this can cause stress on both sides. (If forced to make a choice, I would rather bore the grad students than baffle the undergrads.) If there are graduate students taking this course for 1.00U rather than .75U, then the homework rules will have to be more elaborate. I'll get back to you in that case.

**Exam Policy:** There will be two Hour Exams, roughly in early October and in late November. Exact dates will be announced at least a week in advance. Exams will be closed-book and closed-note, and will resemble the homeworks. Painful recent experiences cause me to remind you that the dates of exams are not subject to individual negotiations. You will need serious documentation in order to qualify for a makeup exam! The Final Exam is comprehensive, and somewhat harder than the Hour Exams. The Final must be held at the scheduled time, which is Tuesday December 14, from 1:30 – 4:30 pm.

**Grading Policy:** Keep in mind that I am grading your work, not you as a person. Each Hour Exam counts 25%, the Final Exam counts 40% and the Homework counts 25%. The lowest 15% is dropped. (Again, painful recent experiences cause me to state that a missed exam cannot be dropped from the computation of the grade.) All grades are numerical. The highest possible grade cutoffs are: A/B – 90%, B/C – 80 %, C/D – 70%, D/F – 60%, by which I mean “A-/B+”, etc. I will try to keep you posted on any curving as the semester progresses. (I reserve the right to curve differently for undergrads and grads.) There are two exceptions to the numerical grading: anyone who gets 96% on the Final (and who took both Hour Exams) gets at least an A- and anyone who gets 75% on the Final will pass.

**Philosophy:** The purpose of this course is to introduce you to differential geometry, the study of curves and surfaces – a subject of great interest to both pure and applied mathematicians. The goal is to understand curves and surfaces both from the outside and from the “inside”. I am not a research expert in differential geometry, but I hope to answer your questions satisfactorily, especially if you give me time to consult research experts. Education is not a zero-sum game when done correctly. I do not consider you my adversaries, and hope the feeling is mutual. Become an active participant in this course. Let it get under your skin and visit your dreams. These are serious steps towards becoming a mathematician.