Math 211: Discrete Mathematics  
Fall semester 2006

Professor       Dave Richeson 
Class location   Tome 121 
Class time      Tues., Thurs. 10:30-11:45 
Office          Tome 242 
Phone           245-1744 
Office Hours   
    Mon. 3:00-4:00
    Wed. 2:45-3:45
    Fri. 9:00-10:00
Email           richesod@dickinson.edu 
Class web page  http://www.dickinson.edu/~richesod/math211.html 
Text            Discrete Mathematics with Applications (3rd edition), by Susanna Epp 

Course description: Discrete mathematics is the gateway course to the mathematics and the computer science majors; it is the course that allows you to develop your mathematical maturity. Perhaps the most important goals are to learn how to think logically and abstractly, and to learn how to present your mathematical ideas clearly and concisely through writing. In this course we will study proof techniques including direct, indirect, and inductive methods. We will also survey topics in discrete mathematics such as logic, set theory, number theory, and graph theory. Time and interest permitting we may also study the pigeonhole principal, sizes of infinity, Russell’s paradox, the halting problem, recursion, and minimal spanning trees. We will cover some or all of the topics in chapters 1, 2, 3, 4, 5, 7, 8, and 11.

Grading: Your grade will be computed based on 650 possible points. The points are distributed as follows.

- 2 exams (150 pts. each)
- Homework (95 pts. total)
- Math chats (5 pts.)
- Final exam (200 pts.)

Exams: There will be two midterm exams. Attendance on exam days is mandatory; if there is an unavoidable conflict please contact me well in advance so that alternate plans can be made. Except in exceptional circumstances, an unexcused, missed exam will
count as a 0 in the grade book. Be sure to schedule your holiday travel plans so that you can attend the scheduled final exam.

**Homework:** The homework in this course will be unlike that of any other mathematics course you have taken. For much of the course the emphasis will be on the presentation of the solutions, not the solutions themselves. You have spent many years learning how to write in other disciplines. Writing mathematics has its own rules and styles. It is during this course that you will learn the skills that you will use in the rest of your career as a mathematician or computer scientist.

Homework will be assigned daily and collected every Thursday. The questions will be posted on the class web page the day of the class. I will post a variety of problems on the web page. I expect you to do all of the problems, but you need only turn in the boldface problems.

Homework will be due at the end of the class. Late homework will not be accepted; there are no exceptions. You are free to (and encouraged to) work together on the homework, but you must turn in your own work, and it should be written in your own words. Copying the work of a classmate is unacceptable, the mildest penalty for such plagiarism being a zero on the problem. Please refer to the college’s Code of Conduct for more information on plagiarism.

I will reserve the first few minutes of each class to answering questions about the uncollected problems from the previous day’s homework assignment.

Each homework assignment will be graded out of 30 points. Note that I will only grade a selection of problems, not all the problems that you turn in. I will drop your lowest homework grade of the semester.

**Writing:** This course satisfies half of the WR (Writing) graduation requirement. A large part of this course is devoted to learning how to write mathematics. You will not have to writing any paper, but you will do a substantial amount of writing (mostly in the form of short proofs). The goal of this course is to learn how to write mathematics in a logical and rigorous way. Occasionally you will be asked to revise what you have written.

**Math chats:** You are required to attend at least two “Mathematics and Computer Science Chats.” These are typically held on Tuesdays at 12:00, and occur approximately once every two weeks. Lunch (usually pizza) will be served. They will be announced in class.

**Attendance and tardiness:** Attendance is mandatory. It is difficult to learn from the text. Much of the lecture will be spent elaborating on the material presented in the text, presenting examples not found in the text and explaining concepts in a different way. On a more practical level, if you attend class you will see what topics are emphasized, thus you will have a better idea of what will appear on the exams. It is important that you arrive to class on time. Entering late shows disrespect and is distracting to the class and the professor. Repeated absences and tardies will affect your grade.
Extra help: My office hours are given above; feel free to drop in as often as you’d like. These are the hours that I will definitely be in my office. During these times discussing mathematics with you will be my priority. Do not come to my office hours with expectations of me doing your homework for you. I will give you hints, point you in the right direction, work through problems with you, etc. But, I won’t simply show you the solution. You will get the most out of my office hours if you have tried the homework in advance. Also, if you miss class due to an unexcused absence, do not come to office hours and ask me to teach you what you missed; you will have to get that information from one of your classmates.

I will be in my office at other times too. Feel free to drop by any time. I may be too busy to get into a long discussion, but I will surely try to help you. If you want to come by at a time other than my office hours you may want to call or email me to be sure I’m available.
**Calendar**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday, Sept. 1</td>
<td>Last day to add/drop or pass/fail</td>
</tr>
<tr>
<td>Thursday, Oct. 5</td>
<td>Exam #1</td>
</tr>
<tr>
<td>Tuesday, Oct. 17</td>
<td>No Class, Fall pause</td>
</tr>
<tr>
<td>Wednesday, Nov. 1</td>
<td>Last day to withdraw with a W</td>
</tr>
<tr>
<td>Tuesday, Nov. 14</td>
<td>Exam #2</td>
</tr>
<tr>
<td>Thursday, Nov. 23</td>
<td>No Class, Thanksgiving break</td>
</tr>
<tr>
<td>Wednesday, Dec. 13, 2:00-5:00</td>
<td>Final exam</td>
</tr>
</tbody>
</table>

**Disclaimer:** I reserve the right to change the syllabus during the semester.
Everyone has his or her pet peeves—you know, those things that really get under your skin (drivers in the passing lane who go 10 mph under the speed limit, the bad grammar in the ‘ten items or less’ sign at the grocery store, drivers who cut diagonally across the parking lot, people who assume everyone uses Windows PCs, etc.). You may not know it, but professors have pet peeves too. Here, in no particular order, is a list of ten things that get under my skin.

Professor Richeson’s Top Ten Pet Peeves

1. **no capital letters in an email.** FYI, IMO it is inappropriate for U 2 email YR professor using AIM shorthand. BTW….it would B GR8 if U used punctuation 2....K? THX! :-)

2. **Ringing cell phones.** There are times when you need a cell phone in class. A student of mine took a phone call during an exam. It was her mother calling to tell her that her ailing grandmother had just passed away. A colleague at another institution had a student who needed his phone on because he was waiting to hear from his parole officer! If you are expecting an important call and need to leave your phone on, that is fine, just let me know in advance. Otherwise, turn your phone off, or leave it at home!

3. **Assignments torn from a spiral-bound notebook.** As an undergraduate, I went through a “green” phase during which I turned in all of my assignments on the back side of paper from a recycling bin. That probably annoyed my professors. That wouldn’t bother me now, but ragged edges do.

4. **Late arrivals.** In Tome the classroom doors are located in the front of the room, so it is impossible to “sneak in” to class unnoticed. This is a small campus; you can get to class on time.

5. **“Is this going to be on the exam?”** or the related “do we have to know this?” Don’t ask it. Everything is fair game. Besides, we’re all here for the joy of learning, right?

6. **Typing during class.** Like fingernails on a chalkboard to me! C’mon, you can wait one hour to check your email.

7. **Whispered conversations.** If it is about math, that’s fine. Otherwise, wait until after class.

8. **Lame excuses.** If you didn’t do your homework, don’t tell me about how your friend’s dog ate it after your roommate turned off your alarm because your coach told you couldn’t miss practice because there was a death in the family. Just say that you didn’t get your homework done.

9. **“Can I do some extra credit?”** Devote the time you would have spent on extra credit to trying to master the course material. It will be worth more than the extra credit, trust me. Besides, extra credit is like a regressive tax---the rich get richer. Typically strong students do the extra credit, struggling students do not. It exaggerates the grade gap.

10. **Eating potato chips while talking to me on the phone.** OK, this probably won’t come up, but it really gets on my nerves!