Course Guidelines | Math 338
Dr. R. Beezer | Spring 2002

Text We will be using *Combinatorics* by H. Joseph Straight and *Introduction to Graph Theory* (Fourth Edition) by Robin J. Wilson.

Home Page Start at `http://buzzard.ups.edu/courses.html` to locate the WWW page for this course.

Office Hours My office is Thompson 321G; the telephone number is 879–3564. Making appointments or simple, non-mathematical questions can be handled via electronic mail — my address is `beezer@ups.edu`. Office hours will be 9:00-10:00 on Monday, Tuesday, Thursday and Friday. I will always be available during these times on a first-come, first-served basis. If these times are not convenient, please do not hesitate to make an appointment with me for another time. You are also welcome to drop by my office without an appointment at any time that I am in (1 P.M. – 4 P.M. is a good time to try). Office hours are your opportunity to receive extra help or clarification on material from class, or to discuss any other aspect of the course.

Homework Problems from the text will be suggested throughout the lectures and posted on the course WWW page. Of course, you are not limited to working *just* these problems. It will be your responsibility to work these problems and seek out my feedback as you desire. You may turn in written solutions for my comments at any time, or you may come by my office to discuss your solutions.

These exercises will form the basis for the classes where we will have problem sessions (most every Friday) and for discussions in office hours. It is your responsibility to be certain that you are learning from these exercises. The best ways to do this are to work the problems diligently when assigned and to participate in the classroom discussions. If you are unsure about a problem, then a visit to my office is in order. Making a consistent effort outside of the classroom is the easiest way to do well in this course.

> Mathematics not only demands straight thinking, it grants the student the satisfaction of knowing when he [or she] is thinking straight. — D. Jackson
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> Mathematics is not a spectator sport. — Anonymous
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> I hear, I forget.
> I see, I remember.
> I do, I understand.
> — Chinese Proverb

Quizzes There will be seven one-hour quizzes — mostly on Mondays. The material to be covered on each quiz will be announced in class. The lowest of your seven quiz scores will be dropped. The comprehensive final exam will be given at 4 P.M. on Thursday, May 16. The final exam cannot be given at any other time, so be certain that you do not make any travel plans that conflict, and since this exam falls late in finals week also be aware that I will allow you to work longer on the final exam than just the two-hour scheduled block of time. In other words, plan your travel arrangements accordingly.

Grades Grades will be based on the following breakdown: Quizzes — 75%; Final — 25%. Reading questions, attendance and improvement will be considered for borderline grades. Scores will be posted on the World Wide Web at
`http://buzzard.ups.edu/courses.html`. A reminder about withdrawals — a Withdrawal Passing grade (W) can only be given during the third or fourth weeks of the semester, after that time (barring unusual circumstances), the appropriate grade is a Withdrawal Failing (WF), *even if your work has been of passing quality.* See the attached schedule for the last day to drop with an automatic 'W' and please read *The Logger* about these often misunderstood grades.

Attendance Daily attendance is required, expected, and overall a pretty good idea.

Purpose Combinatorics is important for many problems in computer science and allied fields (like cryptology), is fundamentally the main part of simple probability questions, and is useful in other fields of mathematics, such as abstract algebra. Many optimization questions (scheduling, vehicle routing, etc.) rely heavily on ideas from combinatorics. Its also a major component of problems classified as recreational mathematics (puzzles and games).

We will have occassion to work with many theorems and develop some theories fully, especially in the later part of the course. The principal thrust of this course early on will be on problem-solving.

Homework Exercises

(Straight, Chapters 0, 1, 2)

Section	Page	Problem
1.1	103	1, 2, 3, 4
0.1	14	6c, 7, 13, 20c, 21, 25
1.2	112	2, 3, 5, 7, 10, 13, 16, 18
0.2	35	1, 7, 9, 11, 13, 15, 18, 21, 24, 28, 31
1.3	127	2, 3, 5, 8, 9, 10, 13, 16, 19, 22, 27
1.4	136	1, 4, 5, 8, 13
1.5	147	1, 3, 6, 7, 12, 15, 17, 19
1.6	159	3a, 5, 8, 10, 11, 16
0.4	81	5, 9, 13a, 16, 23
2.1	185	4, 8, 11, 13, 21, 22–24
2.2	204	3, 4, 7, 10, 15, 21, 22
2.3	227	2a, 3, 5g, 7cd, 9
2.4	239	5, 6, 9, 11, 13, 16, 19

Tentative Daily Schedule

Monday	Tuesday	Thursday	Friday
Jan 21 MLK Day	Jan 22 Straight, Chapter 1	Jan 24	Jan 25 Problem Session
Jan 28	Jan 29	Jan 31	Feb 1 Problem Session
Feb 4 Quiz # 1	Feb 5	Feb 7	Feb 8 Problem Session
Feb 11	Feb 12	Feb 14	Feb 15 Problem Session Potlatch (Sat.)
Feb 18 Quiz # 2 Last day to drop	Feb 19	Feb 21	Feb 22 Problem Session
Feb 25 Straight, Chapter 2	Feb 26	Feb 28	Mar 1 Problem Session
Mar 4 Quiz # 3	Mar 5	Mar 7	Mar 8 Problem Session
Mar 11	Mar 12	Mar 14	Mar 15 Midterm

Spring Break

Monday	Tuesday	Thursday	Friday
Mar 25 Problem Session	Mar 26 Quiz # 4	Mar 28 Wilson, Chaps. 1–6 Straight, Chapter 3	Mar 29
Apr 1	Apr 2	Apr 4	Apr 5 Problem Session
Apr 8 Quiz # 5	Apr 9	Apr 11	Apr 12
Apr 15	Apr 16	Apr 18	Apr 19 Problem Session
Apr 22 Quiz # 6	Apr 23 Straight, Chapter 4	Apr 25	Apr 26
Apr 29 Problem Session	Apr 30	May 2	May 3 Problem Session
May 6 Quiz # 7	May 7		

Final Examinations

Thursday, May 16 at 4 P.M.