Math 117 - Section C - Discrete Mathematics
Course Syllabus

Course Location

MTWF 2:00-2:50 pm, Manchester Hall, Room 020

Contact information

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Office Hours: Tuesdays 4-5 pm, Thursdays 2-3 pm, and by appointment.

Course Information

This course will cover logic and proof techniques in the context of combinatorics, number theory, and graph theory. These correspond to Chapters 2-10 of the text. The formal mathematical thinking and writing you will practice in this course is the foundation for further mathematical study. The knowledge of discrete math and the precise, logical thinking skills you will acquire in this course are necessary for the mastery of computer science.

Website: `http://users.wfu.edu/rouseja/S2020/117`
Textbook: Discrete Mathematics with Applications, Susanna Epp 4th Edition, Brooks/Cole. ISBN: 978-0-495-39132-6.

Class structure

Before class, I will post on the class diary a section or two of the textbook that I strongly encourage you to read before class. I'll start class by asking about any questions students have about the material. At the start of class, I plan to hand out "skeleton notes" that have definitions, but have spaces for students to fill in proofs of theorems and examples. During class, I plan to present the concepts and work through several examples together as a class, or in small groups. Working together is one of the best ways to learn the material, and for this reason, attending class, participating actively, and asking questions will be worth 10 percent of the course grade.

Homework

Math is not a spectator sport. The only way to learn math is to do it. Homework problems will be posted on the class diary after each class. Homework assigned during one week of class will be due the following Friday. (Exceptions to this rule will occur during the weeks that exams occur. During those weeks, homework will be due on Wednesday.) A typical homework assignment will have 10 problems. A graduate teaching assistant will (probably) grade half of

these, and check that you have done the other half. Homework will be worth 10 percent of the course grade.

Exams

There will be two midterm exams. Each will contribute 22.5 percent of the course grade. I am tentatively planning for these exams to occur on Friday, February 14 and Friday, March 27.

The final exam is worth 35 percent of the course grade, and will be given on Friday, May 8 from 2 pm - 5 pm. Calculators are not allowed on exams.

Extra-credit

Project Euler (`https://projecteuler.net`) is a collection of problems that are intended to be solved using a combination of mathematics and computer programming. Many of the questions that appear there relate to the topics we will cover in this course. I will offer each student up to 5 percent extra-credit if they solve up to 25 problems from Project Euler. (Each problem is worth 0.2 percent.) In order to earn credit, you must give me evidence that you have solved the number of problems you claim to, and also provide the computer code, or the reasoning and computations you used to arrive at your answer. Resources for students who are interested in Project Euler but have no prior programming experience are available on the course website.

Grades

If you consistently demonstrate an ability to perform standard computations and solve standard problems, then you have a good chance of earning a C or better. If you can also solve some more difficult problems and provide some insight as to why the methods work, then you have a good chance of earning a B or better. If you become adept at solving standard and nonstandard problems, and if you can justify all of the methods that you use, then you have a good chance of earning an A. Hard work is a prerequisite for earning a good grade (A, B, or C), but no amount of work will guarantee you a particular grade.

If you earn at least 93 1/3%, you are guaranteed to get an A. If you earn at least 90%, you are guaranteed to get an A-, etc. I won't choose the final grade cutoffs until the end of the semester. (So there is a possibility, although it is unlikely, that someone with a final percentage lower than 93 1/3% final percentage might earn an A.)

Getting Help

Here are some resources.

- Read the book! This will be your introduction to the material.
- Attend class. I'll do my best to explain the material, but you'll also have a chance to work with your classmates to understand things.
- Do the homework. The only way to *really* learn math is to do it yourself. This is your chance.

- Talk to other students in the class. You should talk to other students, ask them questions, answer their questions, and work with them on homework.
- Office hours. If you have any questions about the class, come to my office hours. You don't need to make an appointment, just show up.
- There will be MST 117 specific study sessions held by a math graduate student (probably on Thursday evenings). I don't have further details available right now.
- The Math Center is located in 117 Kirby Hall and offers one-on-one tutoring to Wake Forest students. You can make an appointment, or drop-in. See `http://mathandstatscenter.wfu.edu/` for details.

Disabilities

Wake Forest University provides reasonable accommodations to students with disabilities. If you are in need of an accommodation, you are encouraged to contact me privately as early in the term as possible. Retroactive accommodations will not be provided. Students requiring accommodations must also consult the Learning Assistance Center & Disability Services (118 Reynolda Hall, 336-758-5929, `http://lac.wfu.edu`).

General comments

I am excited to about the chance to share the material from discrete mathematics with you. I wish to do so in the best way possible, and this requires your input. Please let me know what I can do or change to aid your learning.

I pledge to do my best as your instructor, and in return I expect each of you to be actively involved in this course by participating in class, and by taking the time necessary (in class, on your own, in office hours) to come to terms with the material.