

Instructor: Ari Mermelstein

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Course Web page: www.sci.brooklyn.cuny.edu/~mermelstein

Class meeting hours: ET6: Tuesdays 6:30-9:10 PM in room 238 NE

Office hour and room: Tuesdays 12:30 - 1:30PM and 5:00 - 6:00PM in 532 NE
or by appointment.

Note: It is okay for any of my students to come to either office hour, but I will give preference to night students in the night office hour.

Required Textbook

Discrete Mathematics Fifth Edition by Kenneth Ross and Charles Wright.
ISBN: 013065247-4.

Prerequisite

CISC 1110 or 1115 (Intro to Programming in C++ or Java)

Mathematics 1011 (Precalculus)

Information most needed from CISC 1110/1115:

Basic Programming Techniques

- Loops (while loops, for loops)
- Arrays
- Conditional statements (if-then-else)
- Strings

Note: It is not important to me (in this course) that you can program perfectly with your eyes closed (although, this should be your goal...) I may do a little bit of programming in class to connect ideas that we're going to study to programming. However, I'll probably write in a pseudocode so that everyone can understand, regardless of programming language.

It's imperative, therefore, that you understand the mechanics of basic programming. (No pun intended!)

Information most needed from Math 1011:

1. Understanding basic properties of real numbers
2. Understanding basic properties of the natural numbers
3. Algebra (equations, adding/multiplying fractions, properties of logarithms and exponents)
4. Basic understanding of logic and sets (we'll go over this, don't worry!)

Course Objectives

By course-end the student will be able to understand and use:

1. Simple proofs of mathematical statements (mathematical induction, indirect arguments) and logical propositions (including quantifiers).
2. Fundamental concepts of set theory and Boolean Algebra. Functional and relational properties (one-to-one, onto, reflexive, symmetric, transitive, equivalence, partial ordering), and operations (composition, transitive closure).
3. Basic matrix operations. Graph algorithms and their application to computer science. Tree traversal algorithms.
4. Counting principles, countable and uncountable sets. Basic probability theory and applications.
5. Big O Notation. Recursive definitions and solutions of simple of recurrence relations. (time permitting)

Academic Integrity

The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the CUNY Academic Integrity Policy and the Brooklyn College procedure for policy implementation can be found at www.brooklyn.cuny.edu/bc/policies. If a faculty member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member *must* report the violation.

Non-Attendance Because Of Religious Observance

The state law regarding non-attendance because of religious beliefs is on p. 53 in the Bulletin. Please let me know now if you have to miss an exam.

Center for Student Disability Services

In order to receive disability-related academic accommodations students must first be registered with the Center for Student Disability Services. Students who have a documented disability or suspect they may have a disability are invited to set up an appointment with the Director of the Center for Student Disability Services, Ms. Valerie Stewart-Lovell at (718) 951-5538. If you have already registered with the Center for Student Disability Services, please provide your professor with the course accommodation form and discuss your specific accommodation with him/her.

Important Dates For the Spring 2017 Semester

Friday, February 2 : Last day to add a course.

Monday, February 5: Last day to file for elective course Pass/Fail.

Monday, February 12: College is closed.

Thursday, February 15: Last day to file for Spring 2018 graduation.

Friday, February 16: Last day to drop a course without a grade.

Monday, February 19: College is closed.

Tuesday, February 20: Conversion Day / Monday schedule

Friday, April 6 : Last day to resolve incompletes from Fall 2017 and Winter 2018.

March 30-April 8: Spring Recess

Wednesday, April 11: Conversion day / Friday Schedule

Monday, April 16: Last day to drop a course with a W grade.

Thursday, May 17: Reading day.

Grades

Five Quizzes - 60% (12% each)

Final Exam- 30%

Homework - 5%

Participation- 5%

Every time we finish a section in the book, I will assign the homework for that section if there is any (page on my website). I will collect the homework after we go over it (if there are any questions), and I will simply mark if it has been done. The homework is being assigned for your

benefit; if you do not practice the topics as I cover them, you will get very lost very quickly and will do poorly on the quizzes.

There will be a quiz every 2-3 weeks for which I will give the last 30 minutes of class to finish. It will not take up the entire class period. Each quiz will have 6 questions (more or less). The questions on the quiz will be similar to the homework questions.

Class participation must be earned (it will not be an automatic 5 points).

Final grade calculation

Your letter grade will be determined as follows:

A+ : 98-100

A : 93-97

A- : 90-92

B+ : 87-89

B : 83-86

B- : 80-82

C+ : 77-79

C : 73-76

C- : 70 - 72

D+ : 67-69

D : 63 - 66

D- : 60 - 62

F : < 60

Exam Dates - Tentative

The final exam (not tentative) for ET6 will be on Tuesday, May 22 at **6:00 PM (NOT 6:30!)** room **TBA**.

Note: The final exam will be cumulative, and I am not allowed to give any more time than 2 hours.

Topics List

- Chapter 1 Sets, Sequences, and Functions (Sections 3-7)
- Chapter 2 Elementary Logic (Sections 1, 2, some of 5)
- Chapter 13 Quantifiers, Predicate Calculus, Infinite Sets, and Diagonalization.
- Chapter 3 Relations (Sections 1-4)
- Chapter 4, and Chapter 2 section 4 Induction, Recursion, and methods of proofs (sections 2-6)
- Chapter 5 Counting and Basic Probability
- Chapter 6 Introduction to graphs and trees (Maybe)