

Mathematics 109  
Dr. Evelyn C. Bailey  
Spring, 1993

Text: Introduction to Discrete Mathematics, McEliece, Ash, Ash

Course Content: Sets, Functions, Induction, Combinatorics, Trees, Euler and Hamiltonian paths and circuits, algorithms, propositional calculus, Boolean algebra. This includes topics from Chapters 1, 2, 3, and 5 in the text along with supplemental material.

Grading:	4 tests @ 100 points	400
	4 quizzes @ 50 points	200
	Final Exam	<u>200</u>
		800 points

In general, A: 720 and up  
B: 640 to 719  
C: 520 to 639  
D: 480 to 519  
F: below 480

February 5	Test 1 Preliminaries (chapter 1)
March 1	Test 2 Combinatorics (chapter 2)
March 31	Test 3 Graphs (chapter 3)
April 19	Test 4 Propositional calculus and Boolean algebra (chapter 5)

Quizzes are unannounced. The best 4 will be counted for grade.  
The final exam will be comprehensive.

Other Dates:

MLK Holiday, January 18  
Spring Holidays, March 8-12  
Last day of classes, April 26

Some Policies:

It is your responsibility to notify your instructor before the scheduled test if you have a conflict that keeps you from attending a test. If your conflict is legitimate, provisions will be made for you to take the test prior to the scheduled time. There is no provision for making up quizzes if you are not in class. Emergencies will be handled on an individual basis.

You also are responsible for work missed when you are absent. There is no policy on class attendance; however, it is to your advantage to be in class. There are no tutors for this course.



Homework assignments are attached. Homework is not collected or graded but is for your benefit and practice.

You may use a calculator for any or all work.

**ALL STUDENTS HAVE AGREED TO ABIDE BY THE HONOR CODE. ALL WORK SUBMITTED FOR CREDIT IS ASSUMED TO BE THE WORK OF THE STUDENT.**

#### Homework

January 13, Wednesday } January 15, Friday }	Section 1.1, Set Theory p. 7: 1-19 odd, 25, 27
January 20, Wednesday } January 22, Friday }	Section 1.2, Venn diagrams and Truth Tables p. 12: 1-19 odd, 31
January 25, Monday	Section 1.3, Functions and Relations p. 19: 1, 3, 7, 11, 13, 19, 28
January 27, Wednesday } January 29, Friday }	Section 1.5, Mathematical Induction p. 37: 1, 2, 5, 7, 8, 17
February 1, Monday	Section 1.6, Mathematical Notation p. 43: 1, 9, 15, 16, 19
February 3, Wednesday	Review for test 1
February 5, Friday	Test 1
February 8, Monday	Section 1.7, Hamming Codes p. 47: 1-4, 18, 19
February 10, Wednesday	Section 2.1, Introduction to Counting p. 53: 1-25 odd
February 12, Friday	Section 2.2, Permutations p. 59: 1-15 odd, 19
February 15, Monday	Section 2.3, Combinations p. 68: 1, 3, 5, 7, 8, 9, 11, 13, 15, 17, 19, 21, 25, 27
February 17, Wednesday	Section 2.4, More Combinations p. 73: 1, 11, 17, 21
February 19, Friday	Section 2.5, More Permutations p. 80: 1, 3, 5, 7, 9, 11, 15, 19, 23
February 22, Monday	Section 2.6, Venn diagrams p. 90: 1, 3, 15
February 24, Wednesday } February 26, Friday }	Review

March 1, Monday

March 3, Wednesday }  
March 5, Friday }

March 15, Monday

March 17, Wednesday }  
March 19, Friday }

March 22, Monday

March 24, Wednesday }  
March 26, Friday }  
March 29, Monday }

March 31, Wednesday

April 2, Friday }  
April 5, Monday }  
April 7, Wednesday }

April 9, Friday

April 12, Monday

April 14, Wednesday }  
April 16, Friday }

April 19, Monday

April 21, Wednesday }  
April 23, Friday }  
April 26, Monday }

## Test 2

Section 3.1 (Euler Cycles and Paths)  
p. 101: 1, 3, 9, 11, 13, 20, 21, 24, 25

Trees and Graphs  
Handout

Section 3.2, Spanning Trees  
Section 3.3, Minimal Spanning Trees  
p. 109: 1, 3, 4, 5, 7, 11-15  
p. 115: 1, 3, 5, 7, 13

Section 3.5, Planar Graphs  
p. 132: 1, 3, 7, 9, 13, 19, 20, 21

Review

## Test 3

Section 5.1 (Propositional Calculus)  
p. 189: 1-5, 7-13, 16-24, 26-31, 34-47

Section 5.2 (Boolean Algebra)  
p. 196: 3, 5, 7  
p. 197: 9-13

Section 5.3  
p. 205: 3, 4, 5, 7, 9, 11, 13

Review

## Test 4

Review for Final