Magnet Advanced Finite Mathematics Syllabus

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Office Hours: Tuesday after school until 4:30; Monday through Thursday mornings from 7:30 to 8:00.

Text: Epp, Susanna S. *Discrete Mathematics with Applications*, 3rd Edition, Brooks/Cole, 2004. ISBN 0534359450. $124.16.

Course Description

The purposes of this course are to introduce the student to finite mathematical structures and to develop skills in writing simple proofs. Topics include set theory, logic, proof techniques, number theory, graph theory, functions, relations, and combinatorics. Students will also develop their mathematical writing and communication skills.

Evaluation is based on a point-system.

First Semester		Second Semester	
3 Tests	450	3 Tests	450
9 Homework Write-Ups	450	8 Homework Write-Ups	400
		Project	250
Total	900	Total	1100

A Word About Homework: Homework is split into two categories: "To Try" and "To Turn-in." Only the problems marked "To Turn-in" will be graded. These will be collected roughly every three to four days, and the sets of collected homework write-ups will be completed neatly, in order, and with care. Sloppy, unorganized, or messy homework will result in a lower grade. Using a computer to type your homework is suggested as long as it is formatted properly; however, technological failure or carelessness is never an acceptable excuse. (Such typed homework may be turned in my sending it to my email.) Test material will come from both "Turn-in" and "Try" problems, as well as class notes, so it is to your advantage to do *all* the homework problems, not just the ones "to turn-in."

As always, the Final Average is 80% of the above grades plus 20% of the exam grade.

You will receive details of the project in April.

There are no make-up tests or homeworks. The lowest test grade may be replaced by the semester exam grade.

Students are required to keep track of their own grades. You may compare your grade calculations with me after school; I will not discuss grades during the school day.

This syllabus provides a general plan for the course; deviations may be necessary.

AFM First Semester Assignments

Section	To Try	To Turn-in	Due
1.1	1, 3, 5, 6, 8, 12, 16, 23, 25, 29, 31, 35, 41, 47	24, 30, 36, 49, 52(b)	
1.2	3, 5, 9, 20, 26, 32, 35, 43, 47, 49(ab)	15, 33, 36, 49(cdef)	
1.3	3, 8, 22, 25, 27, 37, 43	11, 32, 40, 42	HW 1 (1.1, 1.2)
1.4	3, 11, 16, 20, 22, 28, 34(b)	12, 19, 29, 33	
1.5	3, 5, 7, 11, 25, 31, 35, 38, 41, 44	26, 39, 43, 45	
2.1	2, 5, 9, 14, 17, 18(ab), 21(ac), 23(a), 26	6, 18(cd), 24(a), 27	HW 2 (1.3–1.5)
2.2	1, 9, 13, 18, 24, 29, 35, 40, 44	2, 21, 32, 45	
2.3	2, 9, 13, 14, 16, 21, 31, 33, 40(abe), 43(a)	17, 35, 40(df), 43(b)	
2.4	2, 5, 7, 9, 21, 23, 25, 31	11, 15, 32	HW 3 (2.1–2.3)
	Test — Chapters 1 & 2		
3.1	4, 11, 20, 25, 31, 35, 36, 41, 50	27, 37, 49, 54	
3.2	4, 6, 13, 17, 23, 33	15, 35	
3.3	1, 7, 8, 12, 17, 19, 21, 23, 35(ab)	13, 25, 26, 35(c)	HW 4 (2.4, 3.1, 3.2)
3.4	1, 5, 13, 17, 28, 32, 36	18, 37, 40	
3.5	1, 3, 12, 14, 15, 18, 23, 26	21, 27, 29	HW 5 (3.3, 3.4)
3.6	1, 3, 5, 10, 13, 17, 19, 21, 24	11, 18, 25	
3.7	3–17 odd	8, 14, 19	
3.8	1, 3(a), 4, 6, 9–17 odd	3(b), 7, 16, 18	HW 6 (3.5–3.7)
	Test — Chapter 3		
4.1	1, 5, 8, 11, 14, 20, 23, 35, 36, 45, 46, 52, 55	26, 28, 37, 47, 57	
4.2	1, 3, 6, 10, 19, 21	7, 11, 22, 31	
4.3	8, 11, 16, 19, 24	9, 18, 25, 34	
4.4	1, 4, 10, 15, 20	5, 16, 24	HW 7 (3.8, 4.1–4.3)
5.1	5, 7, 10, 13(a), 16, 17(ab), 22(ad), 23	11, 13(b), 17(cd), 22(e), 25	
5.2	3, 5, 8, 12, 16, 23, 25, 28	13, 17, 30, 33	
5.3	1, 3, 5, 9, 14, 26, 29, 34, 48	16, 31, 35, 49	
5.4	1–9 odd, 12	4, 10	HW 8 (4.4, 5.1–5.3)
	Test — Chapters 4 & 5		
6.1	3, 7, 12(a), 18, 21, 28, 31	12(b), 22, 30	
6.2	6, 9, 13(ab), 19, 29(ab), 31, 32, 35, 37	15, 29(c), 38	
6.3	1, 3, 6, 9, 21, 26	10, 22, 27(c)	HW 9 (5.4, 6.1, 6.2)

AFM Second Semester Assignments

Section	To Try	To Turn-in	Due
6.4	5, 6, 8, 13(ad), 19, 21(ab)	10, 13(c), 21(c), 20	
6.5	1, 3, 5, 10, 11	13, 15	
6.6	5, 6, 9, 14, 15, 17(a)	7, 13, 17(b)	HW 10 (6.3–6.5)
6.7	1–19 odd, 24, 26, 28	16, 20, 27, 31	
6.8	1, 2–10 even, 14, 16	5, 7, 17	
6.9	5, 10, 13, 23, 25, 29	14, 30	HW 11 (6.6–6.8)
	Test — Chapter 6		
7.1	1, 3(ab), 5(a), 6(a), 9, 14(a), 21, 31	6(b), 14(b), 32	
7.2	1, 5, 6, 9(a), 12, 16, 17, 21, 40	9(b), 13, 23, 41	
7.3	1, 5, 9, 12, 17, 24, 25, 26, 29	11, 18, 27, 30	
7.4	3, 5, 7, 9, 16, 18, 21	8, 17, 22	HW 12 (6.9, 7.1–7.3)
8.1	1–17 odd, 25–31 odd, 34	6, 14, 28, 35	
8.2	3, 5, 10, 12, 19, 20, 24, 28, 30, 35	1, 7, 23, 27, 32	
8.3	1, 3, 5, 8, 11, 13, 14	6, 15	
8.4	3, 5, 8, 10, 13, 15, 17	9, 14, 16	HW 13 (7.4, 8.1–8.3)
	Test — Chapters 7 & 8		
10.1	1, 5, 7, 11(a), 13, 15, 17, 19(abd), 29	11(b), 18, 19(ce), 30	
10.2	1, 9, 14, 18, 21, 23, 26, 37(ac)	10, 17, 27, 37(bd)	
10.3	1, 5, 7, 10, 13, 17(a), 22, 23, 31, 33, 40(acd)	17(b), 24, 34, 40(be)	HW 14 (8.4, 10.1, 10.2)
10.4	1, 3, 7, 9, 14, 16, 19, 22, 26, 31, 33, 36, 39, 42(a)	10, 17, 20, 23, 26, 32, 40, 42(b)	
11.1	1, 3, 5, 8, 15, 17, 19, 25(a), 28, 39, 40	9, 18, 20, 25(b), 29	HW 15 (10.3, 10.4)
11.2	2–4, 6, 8, 13, 19, 23, 25, 28, 41, 42	5, 17, 21, 29, 43	
11.3	1–19 odd	4, 6, 14, 20	HW 16 (11.1, 11.2)
11.4	1, 3, 8–10, 12, 16, 19	4, 13, 17	
11.5	1, 9, 13, 25, 32, 37, 41, 44	17, 21, 45	
11.6	1–11 odd, 23, 24	6, 10	HW 17 (11.3–11.5)
	Test — Chapters 10 & 11		