SPRING 2005 **MTH U115 APPLICATIONS IN ALGEBRA**

Instructor: Richard Porter **Phone: 373–5888** **Office: 529 Lake**
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Office Hours: Monday 10:30 to 11:45 AM; Wednesday, and Thursday 1:35 to 2:40 PM

Student Mentor: Alissa Fernald **E-mail: fernald.a@neu.edu**

Text: Finite Mathematics & Its Applications by Goldstein, Schneider & Seigel, 8th edition. You may pick up a class packet at Gnomon Copy at 325 Huntington Ave.

General course objective: To introduce students to interesting and useful applications of mathematics while improving their basic skills, problem solving capabilities and understanding of the power of abstraction.

COURSE POLICIES:

1. There will be a weekly quiz to keep you up to date on the material. If you miss a quiz there is no make-up. The best 8 quizzes will be used to determine your quiz average.

2. There will be a one-hour midterm and a two-hour, cumulative, departmental final exam. No student will be granted a request for a special final exam unless it is due to a registrar created conflict. If you miss either of these exams you will receive a grade of zero, as there will be no make-up exams given. A plane ticket home will not excuse you from the final exam, so please plan accordingly. Our final exam is scheduled for Wednesday, April 20 at 3:30 PM.

3. Homework will be assigned at each class and will be periodically collected. Homework, participation in problem sessions, and your work on the in-class Practice Problems will be used to determine your grade if you are on the borderline between two grades.

4. Your grade in the course will be determined as follows:
   Quizzes: 30%, Midterm 30%, and Final Exam: 40%
   THERE IS NO SCALING OF QUIZ OR EXAM GRADES IN THIS COURSE.
   You will be graded to the following scales:

COLLEGE OF ARTS AND SCIENCES**	
Final Avg	Grade
94 - 100	A
90 - 93	A−
87 - 89	B+
83 - 86	B
80 - 82	B−
77 - 79	C+
73 - 76	C
0 - 72	U

ALL OTHER COLLEGES	
Final Avg	Grade
94 - 100	A
90 - 93	A−
87 - 89	B+
83 - 86	B
80 - 82	B−
77 - 79	C+
73 - 76	C
70 - 72	C−
67 - 69	D+
63 - 66	D
60 - 62	D−
0 - 59	F

5. **You must receive a grade of C or higher in this course to demonstrate proficiency in mathematics. A final grade lower than 73 will receive a U (unsatisfactory) and it will be necessary for you to repeat the course and receive a C or better in order to graduate.

6. Calculators are not allowed on the midterm or on the quizzes preceeding the midterm exam. The final exam will be in two parts - a calculator section and a non-calculator section. You will need a calculator that can perform matrix computations for the material in the second half of the course and for the calculator part of the final exam.

7. It is your responsibility to be aware of what happens in the classroom, including announcements of possible exam (or quiz) date changes, material that will be covered and changes to the syllabus, which may occur. If classes are cancelled for any reason, scheduled quizzes or exams will be given the following class.

8. The syllabus along with Quizzes and Practice Problems with answers will be posted on the blackboard site for our section of this course.

9. There will be weekly problem sessions for our section run by Alissa Fernald. Go to the problem sessions for (a) help with material covered in class, (b) help with the homework, and (c) to work through sample problems to improve your understanding of the material to be covered on upcoming quizzes, the midterm, and the final.

10. If you have a concern about this course that cannot be resolved by speaking with me, then please contact the course coordinator, Joan Campbell, 543 NI, ext. 4882, j.campbell@neu.edu or Vice-Chair of the Department of Mathematics, Professor D. King, 447 Lake Hall, ext. 5679, donking@neu.edu.

11. You may receive any extra help in this course during my office hours or at the Math Tutoring Center. The tutoring center offers free tutoring on an individual basis. You just need to sign up for an appointment at 102 Cahners Hall. Please seek help as soon as you experience any difficulty, do not wait until just before an exam. Tutoring will be available starting January 13.

The hours for the Tutoring Center at 102 Cahners Hall are:
Monday, Tuesday & Wednesday 9:15 AM - 8:00 PM
Thursday 9:15 AM - 4:00 PM
Friday 9:15 AM - 1:00 PM

MTH U115 Homework Assignments — Spring 2005

Section	Page	Problems	Handout
1.1 Linear Equations			1
1.3 Point of Intersection (Substitution & Addition Methods)	23	1–15 odd	2
1.2 Linear Inequalities	18	37, 39–42, 52,53	3,4
3.2 Linear Programming (Set-Up)	135	29–34, 37 **SET-UP ONLY**	5
3.2 Linear Programming (Solve)	134	21–27 odd	6
2.3 Operations on Matrices	84	1–25 odd, 28,30, 31–33 35–38,41,42	7
2.3 Operations on Matrices	86	44,45, 46 a–f, 47,49, 50–52	8
2.4 Matrix Inverses	97	3–8, 11–14, 27,28	9
5.1 Sets	213	1–7 odd, 13,14, 21–25, 27–30, 33–37	10
5.2 Venn Diagrams	220	1–6, 9,10,12,27,29,30–32	11
5.3 Survey Problems	226	1–11 odd, 14,15, 17–21, 22–26, 34,35,37,38, 41–46	12
5.4 Multiplication Principle	232	1–19 odd, 23, 25–27	
5.4 Multiplication Principle	233	29–35 odd, 36,38,41,47,49,51,53,54	13
MIDTERM EXAM		(Tentative Date — February 17)	
5.5 Permutations and Combinations	239	1–10, 13, 21–42	14
Distinguishable Permutations			15
5.5 Permutations and Combinations	240	47,49,50,53,56,63,66,68	16
5.6 More Counting Problems	245	1,5,6,10, 13–19, 28–31, 37,45	17
6.3 Probability	286	1–9, 11, 13–16, 23,24,25	
6.4 Probability	294	1–9 odd, 16,19, 20–22, 24 28–30, 32,39	18
6.5 Conditional Probability	305	1–5, 7,8,10,11,12	
6.5 Conditional Probability	305	15,16,18,20,22	
6.5 Conditional Probability	305	27,31,32,36,37,38,40,52,53	19
8.1 Markov Chains	415	1–6, 7,11,12,14,15,25	20
Cryptography			21
FINAL EXAM		(Wednesday April 20 at 3:30 PM)	