## Matrix Algebra with Applications Information Sheet

MATH 308 Spring 2004

- Instructor: David L. Ragozin, e-mail 📰 :rag@u.washington.edu web: http://faculty.washington.edu/rag
- Office: Padelford C-337, Phone: 543-1148
- Class Web Site: <a href="http://faculty.washington.edu/rag/CLASSES/m308">http://faculty.washington.edu/rag/CLASSES/m308</a>
- Class Study Session and Office Hours:
  - <u>Study Session</u>, Thursdays, 10:30-1:30, MSCC Computing Lab in Communications B022. Come to interact with other members of the class and the instructor. Work and discuss homework, quiz and exam issues in an informal setting. Use of the computing environment, with tools like Matlab and Maple, can help with the work, but should not replace your practice in working through the ideas, approaches and arithmetic needed to produce solutions.
  - <u>Office Hours</u>, By appointment. Stop me after class to find a time. Please do no hesitate to see me. It is much better to raise questions as soon as they occur, rather than get farther behind.
- Text: Introduction to Linear Algebra, 5th Ed. by Lee Johnson, R.Dean Riess and Jimmy Arnold
  - An *important* <u>supplement</u> to the text is available. The first few pages replace examples in sections 1.1, 1.2 and 1.3. Print this document, or save the copy handed out on day 1, attach it to your copy of the text and read it, along with the text, before or during the first week.
  - Errata for the text (and its answers) are in <u>http://faculty.washington.edu/rag/CLASSES/m308/HANDOUTS/errata.html</u>. This refers to old (4th) edition. It will be updated as we discover errata in the new (5th) edition.
- Goals:
  - To be able to use the *definitions, theorems and techniques* presented in the chapters 1,3,4 of Johnson, Riess and Arnold's text to set up, analyze and solve problems in linear and matrix algebra.
  - To be able to present your analysis and solutions so others can understand and follow your reasoning.

(The brief document <u>Solutions vs. Answers</u> provides a few directives and an example to help clarify what is meant by a solution. **You must read this**)

- Activities
  - Lecture topics and associated problems for each day are in the Lecture and Assignment Schedule. Each days content will relate to approximately one section of the text. You are responsible for all the non-optional material listed on the assignment sheet, even if it is not discussed in class.
  - <u>Before</u> the lecture <u>read</u> the associated text section and <u>try</u> some of the associated problems. (Be sure you have <u>supplement</u> to the text.) Bring questions to class.
  - <u>Listen</u> to the lecture, raise <u>questions</u>, <u>participate</u> in group problem analysis sessions(both in lectures and study sessions).
  - <u>Review</u> text and class notes and <u>prepare</u> solutions to (at least the) assigned problems <u>before</u> the next class. Prepare for quizzes by reviewing relevent text sections and problem solutions.
- Homework:
  - Do it! Solving the assigned problems is essential to learning the material. As an old Chinese proverb put it:

## I hear, I forget;

I see, I remember;

## I do, I understand!

- Prepare written solutions (not answers see above under goals) before the class when they are due.
- $\circ$  Hand in your solutions by placing them on the (lecture) table <u>before</u> the start of class.
- <u>Format</u> for solutions: Folded in half, lengthwise ,with your name, assignment chapter and section, and due date on the outside upper right corner ( of the back of the last page). Also place your name on the front upper right corner of the first page.
- Model solutions will be available on the due date, through the class web site solutions page.
- Group work on homework is allowed and encouraged. But be sure you do some of each type of problem yourself (remember the proverb). Everyone learns a lot by exchanging ideas and discussing how to analyze and solve problems. To get early feed back on whether you are writing <u>solutions</u> instead of answers, see if a classmate reading

your work understands what you have done from what is written. Challenge each other to show where some reason, explanation or note is given which shows how some step was carried out or some result obtained. If you work with others on a particular homework, please indicate their names on the work you hand in.

• Quizzes:

- There will be half period quizzes approximately every two weeks, beginning Monday, April 5 (the first quiz will only be 15 minutes) and on the last day of class. (Quizzes 5-6 will be on Fridays.)
- The goal of each quiz will be to test whether you can use and explain the definitions and results contained in reading, lectures and homework since the previous quiz. Just as for homework and tests, you must provide <u>solutions (see above under goals)</u> to quiz problems.
- Each quiz will be graded based on 40 points in total.
- Your best 4 quizzes plus the last day quiz will count toward your final grade.
- Projects:
  - $\circ~$  There will be a final project serving as a take-home portion of the final exam.
  - This will be a small group (4-5 people) project which will deal with material related primarily to Chapter 4. The project assignment will be available at least two weeks before the end of classes and the completed project will be due on the last day of classes.
- Exams:
  - There will be a final exam. You will be allowed two 8.5 by 11 sheets of notes (187 sq. in) and a copy of your groups solution to part 2 of the project, but otherwise the exam will be closed book. *Notes are something you produce yourself not just copies of handouts, solutions from the web or copies of text pages; the act of writing or typing out notes serves as a review and reinforcement activity.*
  - You must provide <u>solutions (see above under goals)</u> to all exam problems.
- Quiz-Exam-Project Schedule:

Quiz 1 Quiz 2 Quiz 3	Mon, April 5 Mon, April 19 Mon, May 3			
Quiz 4	Mon, May 17			
Quiz 5	Fri, May 28			
Last Quiz	Fri, June 4			
Final Project	Due June 4 (last day of class)			
Final Exam	In our classroom at the time and date listed in the Official UW Exam Schedule			

• Grades: Grades are based on your understanding and use of the material studied. You will show this through your solutions to exam, quiz, homework, and final project problems.

<b>Relative Contribution to Grade</b>		Approximate Grade Ranges	
Component	Weight	Grade Range	% Correct
		4.0	90 - 100 %
Total of 5 Quizzes	50%	3.0-3.9	75 - 89 %
Final	30%	2.0-2.9	60 - 74 %
Final project	10%	1.0-1.9	45 - 59 %
Homework	10%	0.0	< 45%

Note 50% of your grade is determined by work handed in on or after the last day of classes.

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Back to the Math 308 Home Page

