Northwestern University

Department of Electrical and Computer Engineering

ECE 222: Fundamentals of Signals and Systems Fall 2004

Information Sheet:

Instructor:
Prof. Randall Berry
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Office Hours: MW 3-4pm or by appt.

Teaching Assistants:
Ruiming Chen
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Office Hours: Tues. 4-6pm

Time and Place:

MTWF 2:00-2:50 pm, Room A110 Tech

Prerequisites by courses:

- ECE 202

Prerequisites by topic:

- Basic introduction to electrical engineering concepts; knowledge of calculus and some familiarity with differential equations.

Text:

A. V. Oppenheim and A. S. Willsky (with H. Nawab), *Signals and Systems, 2nd Ed.*, Prentice Hall, 1997.

Course Overview:

Signals and systems arise in many areas of electrical and computer engineering as well as most other fields of engineering. This course introduces the basic techniques used for analyzing and describing signals and systems, such as convolutions, Fourier methods and Laplace transforms. Both continuous-time and discrete-time signals and systems will be covered.

Course Website: http://www.ece.northwestern.edu/~rberry/ECE222/

Handouts and homework assignments not picked up during class will be available on the website. If you miss a lecture, it is your responsibility to check the course web page and print out any new assignments. Any important announcements will also be posted here – so check this page often!

Problem Sets:

Problem sets will be generally assigned on a weakly basis. The problem sets are intended to help you learn the material developed in the course and are an important part of mastering this subject. Problem sets must be handed in by the end of the class in which they are due. Solutions

will be made available for each problem set shortly after they are handed in. Because of this, late problem sets will not be graded. Failure to complete a majority of the problem sets may result in an incomplete grade for the course.

If you want extra practice, there are also problems at the end of each chapter that have answers provided in the back of the book.

Collaboration:

Working together in small groups on the problem sets or to study can be an excellent way to better learn the material. We encourage this type of collaboration on homework as long as each person is involved in doing 100% of the work. When you turn in a problem set with your name on it, we assume that you have worked each problem and verified its correctness. Simply copying solutions from other students or cheating on exams is an act of academic dishonesty and will be dealt with accordingly.

Exams:

There will be two regular exams and one final exam on the following dates:

- Exam #1 – Wednesday, Oct. 20, during class.
- Exam #2 – Monday, Nov. 15, during class.
- Final Exam – Wednesday, Dec. 8, 9:00 – 11:00 am.

The two exams will be closed book, but you will be allowed one 8.5x11 sheet of notes (both sides) for the first exam and two sheets for the second exam. The final exam will cover all material in the course and will be open book/open notes. Calculators will not be allowed (or needed) on any of the exams.

Course Grade:

Your final grade in the course is based upon our best assessment of your understanding of the material. The weightings used to determine the final grade are:

Problem Sets	20%
Exams (2)	40%
Final Exam	40%

Tentative Syllabus:

i. Signals and systems (*chapter 1*)
ii. Linear Time-invariant Systems (*chapter 2*)
iii. Fourier Series (*chapter 3*)
iv. Continuous-time Fourier Transforms (*chapter 4*)
v. Discrete-time Fourier Transforms (*chapter 5*)
vi. Laplace Transforms (*chapter 9*)