ECE 223 Signals & Systems II

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classes will be taught over distance learning technology to enable attendance in multiple classrooms:
- DLC 204: seats 56 students, room from which I will teach
- Windows Media Stream: 1-way audio & video, need fast connection
- Windows Media Archive: 1-way audio & video, posted within 24 hours of lecture, can skip forwards and backwards

Lecture Overview
This Time
- Syllabus
- Miscellaneous Notes
- Class overview & logistics
- Begin discussion of complex exponentials

My Background
- Ph.D. 1999
- Teaching in PSU ECE dept. 5.5 years
- Third time teaching this course
- Research area: Biomedical signal processing
  - See http://bsp.pdx.edu

Electrical & Computer Engineering
J. McNames Portland State University ECE 223 Spring 2005 Lecture 1
Textbook

*Signals & Systems*
- Relatively new textbook by an established and well-known author
- Verbose, but thorough
- Should be shorter and easier to read than text used in previous years
- Will try to follow closely
- My notation may differ from the textbook slightly
- Required

Course Resources

- Textbook
- Recitation sections
- Office hours (mine and TA’s)
- IEEE Tutors
- Lecture notes
- Homework solutions
- Distance learning classroom
- Course web site: http://ece.pdx.edu/~ece2xx/ECE223

Assessment

- Homework: 10% (completeness only)
- Exams: 30% each
  - Exam 1
  - Exam 2
  - Final
- Only required homework will be graded

ECE 223 Topics

- Fourier Series Representation of Periodic Signals (Ch. 3)
- Continuous-Time Fourier Transform (Ch. 3)
- Discrete-Time Fourier Transform (Ch. 3)
- Sampling (Ch. 4)
- Introduction to Communications (Ch. 5)
- The \( z \)-Transform (Ch. 7)
- Introduction to Discrete-Time Filters (Ch. 8)
6-digit Codes and Homework Labels

- I use 6-digit codes to post your grades online and for homework
- Email code to me this week
- Your codes from previous terms do not roll-over into this term
- Can be any character that you can send via a plain-text email
- Remember it for exams
- Label Homework as follows
  - First letter in last name & 6 digit code
  - Assignment Number
  - Class
- Example
  A–123456
  Homework 3
  ECE 223

Homework Assignment 1

- Email me 6-digit code
- Reading
  - Review: Chapters 1 & 2
  - Required: Chapter 3: Sections 1-4
- Required Problems (must turn in)
  - Ch. 3: 48a, 49b 50d, 51d
- Recommended Problems (don’t turn in)
  - Ch. 3: 48d, 49f, 50e, 51e
- Required problems due on Monday, April 4
- Assignment is also posted on the class web site
- Solutions will be posted soon
Logistics: Text & Homework Solutions Errata

- Each error worth 50% of a homework
- Find two errors = can skip an assignment
- Cannot receive more than full credit for homework
- Typos and grammar count
- Must be first to email me
- Will respond when possible (typically within a few days)
- I don’t have a sense of how many errors there are

General Comments on Class

- Challenging
- Very little circuit analysis
- Less number crunching
- More focus on signals, than systems
- Mixture of core concepts and introductions & overviews of ECE sub-disciplines
  - Core material: Fourier series and transforms, $z$-Transform
  - Introductory material: Sampling, communications, DT filters
- Higher level of abstraction than ECE 222
- Good overview of signal processing fundamentals