**ECE 222 Signals & Systems I**

ece.pdx.edu/~ece2xx/ECE222

Dr. James McNames
mcnames@pdx.edu
Electrical & Computer Engineering

---

### Classrooms

We will use the distance learning technology to enable attendance in multiple classrooms

- DLC 204: seats 48 students, room from which I will teach
- Will also probably use DLC 304 for exams
- 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

---

### Textbooks

*Fundamentals of Electric Circuits, 2nd ed.*, by Alexander & Sadiku

- Students like it
  - Concise
  - Orderly presentation
  - Easy to follow methodology (step-by-step mechanics)
  - Many examples
- I didn’t like it
  - Homework problems too easy and insufficient variation
  - Homework solutions used poor & inconsistent methodology
  - Examples and problems contain unrealistic circuit elements
  - Introduction to systems analysis odd (ECE 222)

---

### Lecture Overview

**This Time**

- Syllabus
- Miscellaneous Notes
- Class overview & logistics
- Introduction to Signals & Systems

---
Textbooks Continued

*Signals & Systems*

- Relatively new textbook by an established and well-known author
- Verbose, but thorough
- Students haven’t liked it, but I don’t know of a better alternative
- Will try to follow closely
- My notation may differ from the textbook slightly
- Required

---

Our Path — Planned

- Fundamentals of Signals
- Linear Time-Invariant Systems
- Convolution
- Laplace Transform
- Laplace Transform Circuit Analysis
- Transfer Functions
- Two-Port Networks
- Bode plots
- Pole-zero diagrams
- Analog Filters

---

Course Resources

- Textbooks
- IEEE Tutors
- Course web site
- Lecture notes
- Homework solutions
- Distance learning classroom
- Web site: [http://ece.pdx.edu/~ece2xx/ECE222](http://ece.pdx.edu/~ece2xx/ECE222)

---

Course Web Site

URL: [http://ece.pdx.edu/~ece2xx/ECE222](http://ece.pdx.edu/~ece2xx/ECE222)

- Syllabus
- Course outline
- Lecture notes
- Online lectures
- Errata
- Homework assignments & solutions
- Previous course web pages (old exams)
- Grades
**Lecture Notes**

- Lecture slides are posted on the class web site
- I will be updating them slightly this term
- Watch for updates as late as 30 min prior to lecture
- Updates will be mostly minor
- Workspace is provided for examples that will be filled in during lecture
- Helpful to print them out beforehand

**Homework & Online Lectures**

- Homework solutions will be posted shortly after assigned
- Previous students have used the solutions as a learning tool
- Lectures will also be posted online
- Both will be password protected
  - User name: ECE222 (no space)
  - Password: PoleZero

**Exams**

- Exams may include questions on concepts covered in ECE 221
- Exams from previous terms are available online

**6-digit Codes**

- I use 6-digit codes to post your grades online and for anonymous identification on exams
- Email code to me this week
- Can be any character that you can send via a plain-text email
- Remember it for exams
- Homework labelling:
  - First letter in last name
  - 6 digit code
  - Class & term (ECE 222, Winter Term 2006)
- Example
  - M-1A2B3C
  - ECE 222
  - Winter 2006
Logistics: Text & Lab Assignment 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 do not count
- Must be first to email me
- Known errata are posted on the web site
- New HW will be assigned this term, so expect errors in the HW solutions
- There tend to be more errors in the solutions than the texts

Homework Assignment 1

- Email me 6-digit code
- Read
  - Chapter 1 of Signals & Systems, Sections 1.1–1.6, 1.11
  - Appendix A.2 of Signals & Systems
  - Appendix B of Electric Circuits
- Problems
  - SS Ch. 1: 6,8,9d,9g,14c,14d,21,48,49,52e
- Assignment is also posted on the class web site
- Solutions are also posted
- Due on Wednesday, January 18 – 1.5 weeks

Scientific Calculators

- Less important than for ECE 221
- This term will work more with variables than numbers
- Will not be allowed during exams

General Comments on Class

- Challenging
- Rapid pace, but slower than ECE 221
- Less number crunching, more abstract analysis than ECE 221
- Many new abstract concepts
- Essential knowledge for other ECE classes, especially ECE 321
- Focus will be on concepts, not the math