ENGR 203 Spring 2017

Please work on Quiz 0

Action Items

• Timesheet for office hours and help sessions
  – Please mark ‘x’ if not available
• Anonymous feedback on class webpage
  (http://web.engr.oregonstate.edu/~karti/engr203.html)
• HW#0 posted on class webpage
• Review
  – Complex numbers
  – Circuit analysis: ENGR 201/202
Organization and Policies

- **ENGR 203**: Tu/Th 10-11:50am
  - Lecture Tu/Th 10-11am; Break 11-11:10am
  - Recitation Tu/Th 11:10-11:50am
    - Problem solving sessions
- Class website (lecture notes, HW, etc.)
  - [http://web.engr.oregonstate.edu/~karti/engr203.html](http://web.engr.oregonstate.edu/~karti/engr203.html)
- You can work on HWs from HW#1 onwards individually or in groups of 2 (Form groups by Thu April 6)
- No laptops allowed in class
- No late HWs accepted
- No makeup exam/quiz
  - Exception: medical emergency

 ENGR 201

- Circuit variables
  - Current, Voltage, Charge, Power
- Basic laws
  - KCL, KVL
- Circuit components
  - R, C, L, independent sources, dependent (controlled) sources
- Linear circuits
  - Ohm’s law \( V = IR \)
- Analysis
  - DC sources
  - Nodal, mesh
- Useful tools
  - Series/parallel combinations
  - Superposition
  - Thevenin/Norton equivalent circuits
  - Source transformation
ENGR 202

- **AC sources**
  - Sinusoidal sources: \( \cos(\omega t), \sin(\omega t) \)
- **Phasor analysis**
  - Complex algebra
- **Circuit components**
  - \( R, C, L \), independent sources, dependent (controlled) sources
- **Linear circuits**
  - Ohm’s law \( V = IR \)
- **Analysis techniques from ENGR 201**
  - Nodal, mesh
  - Series/parallel combinations
  - Superposition
  - Thevenin/Norton equivalent circuits
  - Source transformation

ENGR 203

- **Time-domain response of circuits for any input signal**
  - Generalize solution techniques and connections with AC analysis (ENGR 202)
- **Circuit components**
  - \( R, C, L \), independent sources, dependent (controlled) sources
- **Linear circuits**
  - Ohm’s law \( V = IR \)
- **Analysis techniques from ENGR 201**
  - Nodal, mesh
  - Series/parallel combinations
  - Superposition
  - Thevenin/Norton equivalent circuits
  - Source transformation
Sampling is Key to Digitized Analog Information (CD, DVD, …)

Digitized music on a Compact Disc (CD)

Sampling Important for Many Applications

- **Any sensing and control application**
  - Analog sensor (continuous time information)
  - Digitize analog information using an Analog to Digital Converter (ADC)
  - Process signal in digital domain using a processor (DSP)
  - Convert back to analog domain using a Digital to Analog Converter (DAC) for control