ENGR 203 Fall 2018

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 Tuesday Sept 25)
  - HW#0 is an individual homework
- **No laptops allowed in class**
- **No late HWs accepted**
- **No makeup exam/quiz**
  - Exception: medical emergency

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**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)

From: Prof. Mark Fowler

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