ENGR 203 Spring 2016

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
• You can work on HWs from HW#1 onwards individually or in groups of 2 (Form groups by Th March 31)
• 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

From: Prof. Mark Fowler