Electrical Engineering
at
Wright State University

Presented by Mike Saville, PhD, PE
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Electrical (ĭ-lĕk’trĭ-kəl) engineer (ĕn’jə-nîr’) – one who uses math and science to create electrical and electronic technologies.
Professional’s Job Salaries National Averages (10th to 90th percentile)

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Why Consider Wright State for Electrical Engineering?

• Student survey at graduation
  – 87% of BS graduates have paying jobs within a few weeks of graduation
  – Average starting salary: $60,000
  – Starting salary ranges from $55,000 to $75,000

• EE Programs
  – 4-year BS, ABET accredited program
  – Pre-law and Pre-med tracks
  – 5-year combined BS/MS electrical engineering program
  – Many internship/co-op opportunities
Why are electrical engineers valued?

Create, design, build and improve public and personal communication systems and devices; computing and robotic systems; power systems ranging from wireless energy transfer to the public energy grid; automated control systems for automotive and manufacturing industries; sensing systems for private (gaming, transportation), commercial (aviation) and military applications; foundational circuits, components, materials for all aspects of electrical and electronic systems.
VLSI and Computer engineering

Control Systems

Electronics

Microwave

Signal Processing and Wireless

Image from course text: Fundamentals of Electromagnetics, Ulaby et al.
Wright State’s EE Program

• First Year
  – Building a foundation (math, physics, engineering technologies)
  – Problem solving, computer programming, build basic circuits (Arduino projects)

• Second Year
  – Building a foundation (math, physics, electrical engineering tools)
  – Measure and observe electrical quantities
  – Hardware lab courses; myDAQ software-based labs

• Third Year
  – Essential skills in electrical engineering (core EE courses, design labs)
  – Analyze electrical circuits/systems; design electronic components
  – Core courses in selected track, lab intensive

• Fourth Year (capstone year)
  – Focus courses in selected track, labs
  – Senior Design Project
Example of Senior Design

Product need:
Paper calculations
What are loads on the motors and support structures as a function of antenna size and weight?
What are the torque and power specifications for each motor?
What are the trade offs between Open-loop and Closed-loop control system?
What are the trade offs between servo and stepper motors?
What are the accuracy and precision of each movement or rotation?
Example of Senior Design

 Manufacture (assemble)
Example of Senior Design

Video during development testing.
Questions

• Contacts:

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