UVU CONCURRENT ENROLLMENT

INTRODUCTION TO ELECTRICAL AND COMPUTER ENGINEERING

ECE 1000

Two of UVU's newest 4-year Engineering Degrees

COMPUTER ENGINEERING & ELECTRICAL ENGINEERING

UVU SMITH COLLEGE OF ENGINEERING & TECHNOLOGY

ECE 1000:

Introduction to Electrical and Computer Engineering

provides a comprehensive overview of the fundamental topics and applications of electrical and computer engineering. The course covers both the theoretical and practical aspects of electrical and computer engineering, such as circuits, microprocessors, programming, and renewable energy.

The course also illustrates how electrical and computer engineering can be integrated to design and implement complex systems and devices that solve real-world problems. Students will gain a solid foundation for further studies in the ECE program and explore their interests in various domains of electrical and computer engineering.

Course Topics

- Electricity, circuit basics, and sensors
- Communication systems
- Computer systems
- Controls and signal processing basics
- Arduino microcontrollers
- MATLAB, Simulink and LabVIEW software
- Engineering design process
- Engineering economics and ethics
- Technical communication and engineering reports

Learning Outcomes

- Explain basic electrical quantities including charge, current, voltage, energy, power, various sources of electricity, and resistance.
- Apply circuit theory and techniques to resistive circuits.
- Use MATLAB and LabVIEW to solve engineering problems.
- Explain the engineering design process.
- Define working aspects of the engineering profession.
- Identify the steps that engineers follow when designing and presenting their products and services.

With the hands-on projects in this course, you will gain the basic knowledge of what it means to become an Electrical/Computer Engineer as well as applying your obtained skills to some real world challenges.

Project Examples

- Spirograph drawing machine
- Automated desktop greenhouse
- Self-driving car
- Homemade cloud storage device
- Vibration sensor
- Vending machine
- Autonomous humidifier
- Ambilight light strip
- Distance measurer / parking sensor
- Binary blaster educational game

Required course materials

- Pay $99 for zyBook access (a web-native interactive content to help you refresh your existing knowledge of the material and initiate the learning process/introduce the new material).
- Additional resources for further learning will be provided at no extra cost.
- Students will receive a lab kit (worth $200) without any charges, to be returned at the end of the semester.

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