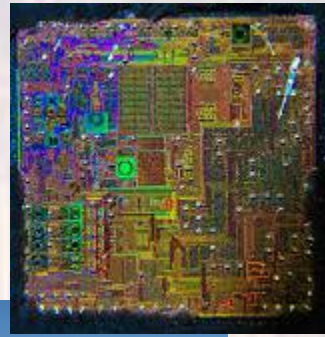# ELE 1601 Intro

Last updated 2/13/23

These slides introduce Dr. Johnson and ELE1601

Dr. Johnson

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ELE1601 Intro

- ELE1601 – Introduction to programming for EEs

Course Description

This course introduces concepts that are required to solve engineering problems using structured programming techniques. Students will develop a working knowledge of a high-level programming language, structured programming techniques, and the tools used in developing solutions to solve engineering problems. Emphasis will be placed on understanding the interaction of programs with the supporting hardware (program flow in memory, data usage in memory, pointers, and structures). Homework assignments will include moderate sized, multi-lecture programs. Many assignments will introduce concepts found in Electrical Engineering problems. A course project incorporating the major topics from the class may be included. (prereq: none)

ELE1601 Intro

- ELE1601 – Introduction to programming for EEs

Course Learning Outcomes

Upon successful completion of this course, the student will be able to:

- Design, write, and document algorithmic solutions for engineering problems
- Employ variables, expressions, and operations in C
- Use structured programming techniques in C
- Design and write functions in C
- Explain concepts and terminology related to processor architecture
- Describe the relationship between Software and Hardware
- Use Integrated Development Environment tools for software development and debugging
- Utilize library functions and algorithms
- Utilize basic data structures
- Recognize and employ good software practices

ELE1601 Intro

- Why a special programming class for EEs
  - EEs work on a wide range of topics that span systems, hardware and software
  - While "coders" do not need to understand what is happening at the hardware level – EEs do!

  - Instead of just writing c = a + b; and moving on, we will understand what a,b,c are in the hardware, what happens with the + and = signs, and how that line of code turns into a string of 1s and 0s that the actual computer hardware understands

ELE1601 Intro

- Dr. Johnson's Website
  - https://faculty-web.msoe.edu/johnsontimoj/index.html
  - Search johnson and MSOE in your browser

ELE1601 Intro

- ELE 1601 Website
  - https://faculty-web.msoe.edu/johnsontimoj/ELE1601/index-ele1601.html

  - Link in upper right-hand corner of Dr. Johnson's website

ELE1601 Intro

- Syllabus
  - https://faculty-web.msoe.edu/johnsontimoj/ELE1601/files1601/syllabus.pdf

- Class Notes
  - https://faculty-web.msoe.edu/johnsontimoj/ELE1601/index-ele1601-schedule.html

- HW
  - https://faculty-web.msoe.edu/johnsontimoj/ELE1601/index-ele1601-hw.html