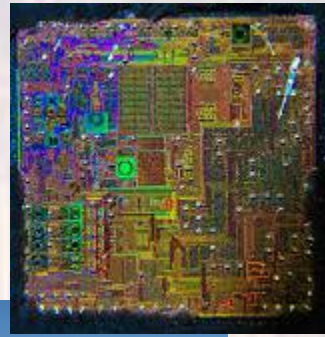


ELE 1601 Intro

Last updated 2/13/23

These slides introduce Dr. Johnson and ELE1601

Dr. Johnson



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



About MSOE Admissions and Aid Academics
Campus Experience The MSOE Advantage

Dr. Timothy Johnson
Dr. Johnson | EE Dept | ELE 1601 | ELE 3510

Fall Professor Johnson's Home Page 2023

Contact Information

Office: S-336 top of the ramp - end of the hallway
Office Hours: TBD, or by appointment
[See my open door policy](#)
[Weekly Calendar](#)

Office Phone: N/A
Email: johnsontimoj@msoe.edu
For class specific email - prepend all email subjects with "class ID". For example: "ELE 1234 - question about quiz 2"



Freshman year - 1977 (RPI)



2019 - with one of my toys

Activities

Common Resources
[Career and Student Resources](#)
[Resources for: C / Embedded Systems / Logic / Tools](#)

Advising
[Advising Requirements and Links](#)

Research Interests
Microprocessor Architecture
Multi-processor System Design
System on a Chip (SoC) Architecture
VLSI Circuit Design
Engineering Management

Current Classes
[ELE1601 - Intro to Programming for EEs](#)
[ELE3510 - Digital Syatem Design](#)

Previous Classes

Background

This is my eighth year as an MSOE faculty member. Prior to joining MSOE I spent 3 years as a professor at Northern Illinois University.

Before joining the academic ranks I enjoyed a thirty year career in the advanced technology industry spanning the military, industrial, commercial and consumer markets. I have been involved in basic and applied research, product development, engineering management, and business management. I have designed or been responsible for the design of over 250 integrated circuits and was responsible for more than \$2B of integrated circuits on an annual basis. I worked directly for [Motorola](#), [Harris Corporation](#), [IBM](#) and [RCA](#) and indirectly with every major semiconductor company around the world.

Major Programs and Projects

Motorola: Microtac, Startac, Droid, Razr
Motorola: Iridium, Tablets, Set-top Boxes
Motorola: 1st in the world 3G chipset
Motorola: 1st in the world LTE chipset

ELE1601 Intro

- ELE 1601 Website
 - <https://faculty-web.msoe.edu/johnsontimobj/ELE1601/index-ele1601.html>
 - Link in upper right-hand corner of Dr. Johnson's website

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Dr. Johnson | EE Dept | ELE 1601 | ELE 3510

ELE 1601 Intro to Programming for EEs Fall 2023

How to be Successful in ELE 1601

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For class specific email - prepend all email subjects with "class ID". For example: "ELE 1234 - question about quiz 2"

Class Resources
Text - Required
None
Text - Optional
C Programming: A Modern Approach, 2nd edition
K. N. King
ISBN-10: 0-393-97950-4
Syllabus
Syllabus
Section 011.021
[Schedule and Class Notes](#)
[Homework and Tests](#)

Class Information
Lectures 001
Location: TBD
Class Times: MWF 9:00
Lectures 002
Location: TBD
Class Times: MWF 10:00
Recitation (optional)
Location: TBD
Rec Time: TBD

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ELE1601 Intro

- Syllabus

- <https://faculty-web.msoe.edu/johnsontimobj/ELE1601/files1601/syllabus.pdf>

- Class Notes

- <https://faculty-web.msoe.edu/johnsontimobj/ELE1601/index-ele1601-schedule.html>

- HW

- <https://faculty-web.msoe.edu/johnsontimobj/ELE1601/index-ele1601-hw.html>

The screenshot shows the course website for ECE 1601 at MSOE. The header includes the MSOE logo and the name of the instructor, Dr. Tim Johnson. The main content area is titled "ELE 1601 Intro to Programming for EEs Fall 2023" and "How to be Successful in ELE 1601". It is divided into several sections: "Contact Information" (Office: S-336, Office Hours: TBD), "Class Information" (Lectures 001, Lectures 002, Recitation optional), "Class Resources" (Text - Required: None, Text - Optional: C Programming: A Modern Approach, 2nd edition by K. N. King), and "Syllabus" (Section 011, 021). A diagram titled "INSTRUCTION MEMORY" shows a flow from "INSTRUCTION MEMORY" to "CONTROL" and "DATA MEMORY", which then feeds into "CPU". A code snippet is also visible on the right side of the page. Three arrows point from the text on the left to the "Syllabus" link, the "Schedule" link, and the "Homework and Tests" link in the "Class Resources" section.