ELE 3510 Intro

Last updated 1/20/25

ELE 3510

- ELE3510 – Digital Systems

Course Description

This course is designed to give students a solid foundation in 21st century digital systems design practices. The course integrates digital logic, memories, library functions and a processor to develop SOPCs (System-On-A-Programmable-Chip). Designs are coded using a hardware description language, synthesized, and simulated using industry-based tools and implemented on an industry standard FPGA platform. Advanced projects in this course will include both hardware development and software developed to run on the hardware.

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- ELE3510 – Digital Systems

Course Learning Outcomes

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

- Design and simulate multi-block digital systems utilizing registers, counters, Finite State Machines (FSMs), Memories, and other common blocks
- Utilize library blocks in digital designs
- Configure and implement a processor
- Write and execute code for a processor integrated on an FPGA
- Combine original designs, library elements, and a processor in various configurations
- Interface to external peripheral devices
- Architect, design, and validate a complete digital system as a final project

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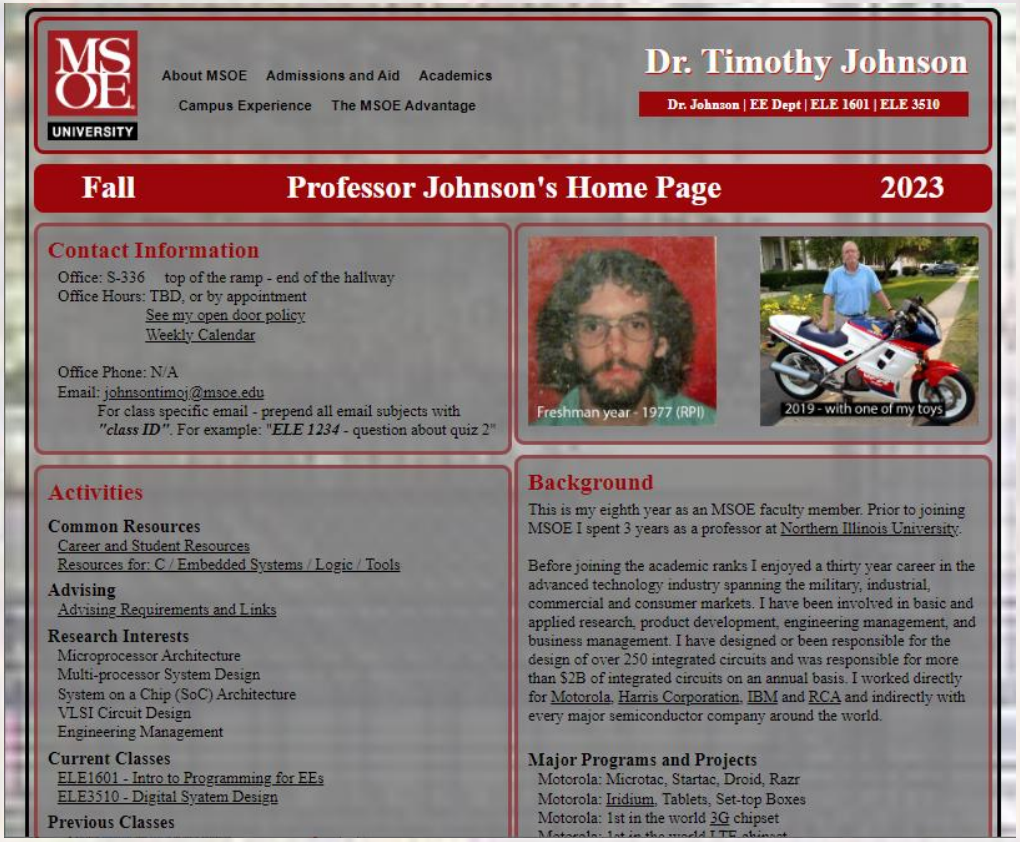
- Dr. Johnson's Website
  - https://faculty-web.msoe.edu/johnsontimoj/index.html
  - Search johnson and MSOE in your browser



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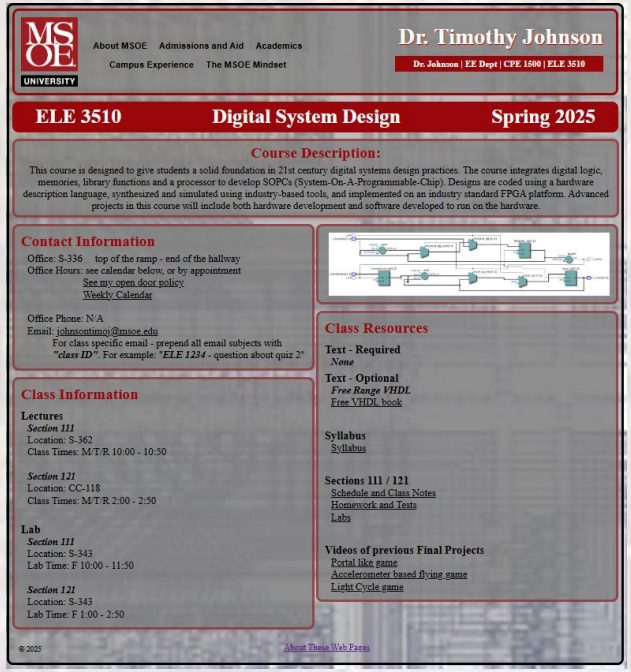
- ELE 3510 Website
  - https://faculty-web.msoe.edu/johnsontimoj/ELE3510/index-ele3510.html

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



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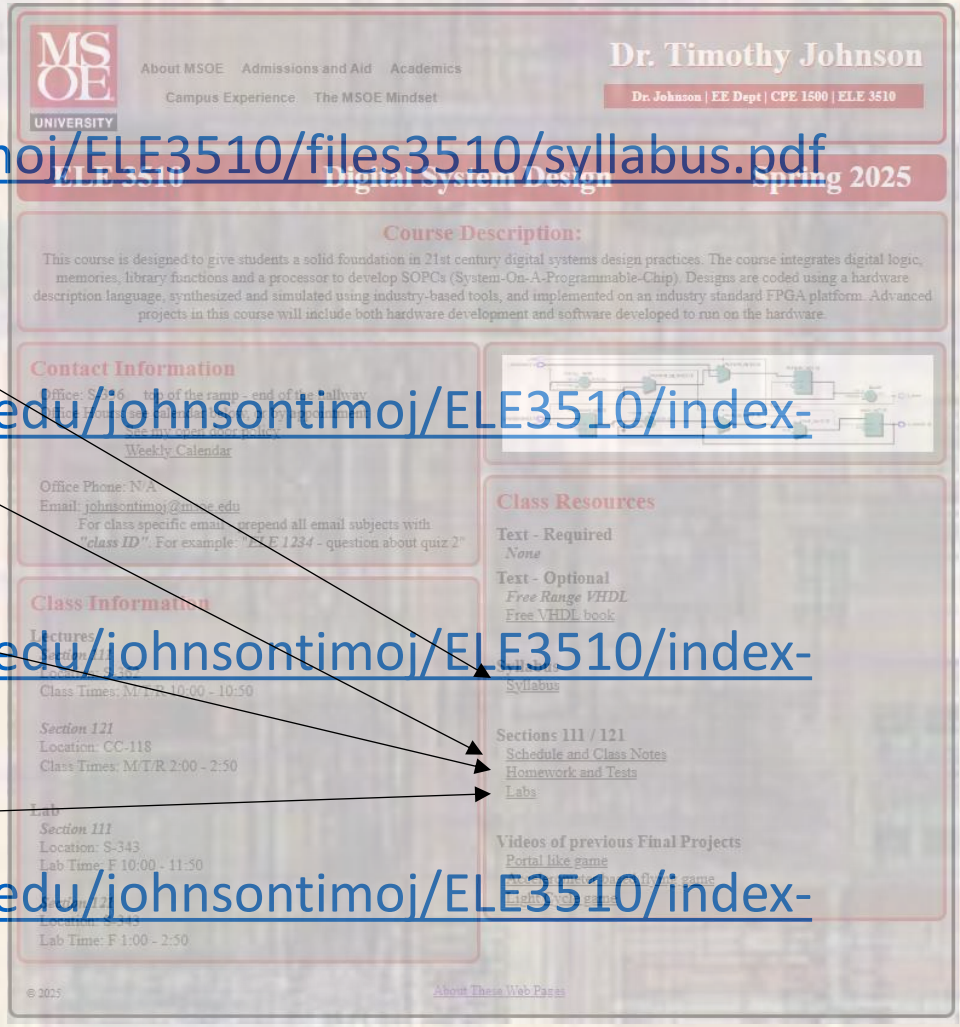
- Syllabus
  - https://faculty-web.msoe.edu/johnsontimoj/ELE3510/files3510/syllabus.pdf
- Class Notes
  - https://faculty-web.msoe.edu/johnsontimoj/ELE3510/index-ele3510-schedule.html
- HW
  - https://faculty-web.msoe.edu/johnsontimoj/ELE3510/index-ele3510-hw.html
- LAB
  - https://faculty-web.msoe.edu/johnsontimoj/ELE3510/index-ele3510-lab.html



Dr. Johnson

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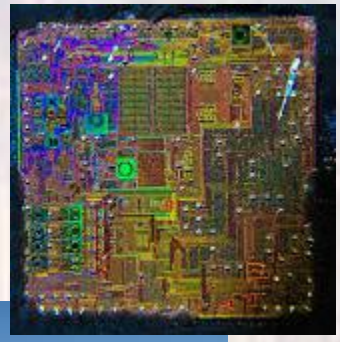

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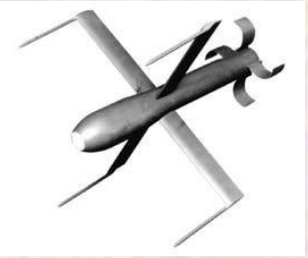

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