FACULTY: Martin Hebel, Associate Professor
ASA 211A
Phone: 618-453-8806
Email: mhebel@siu.edu

OFFICE HOURS: M: 10:00 – 11:50
T, Th: 9:30 – 11:20
or as arranged

COURSE DESCRIPTION:
This course emphasizes microcontroller fundamentals and applications. A selected microcontroller architecture will be studied and programmed in Assembly and a high level language. Emphasis will be placed on internal operation of a processor, memory and configuration and control.

MEETING TIMES: T, Th: 2:00 – 3:50, ASA 204A

PREREQUISITE: EST-341 or consent of department.

TEXTBOOK: Provided Data Sheets

COURSE OUTCOMES/OBJECTIVES:
Upon successful completion of this course, the student will be able to:

1. Explain basic terminology and describe the component parts and operation of a microcomputer system.
2. Explain the operation of memory systems in microcomputer systems based on the most common memory technologies.
3. Describe the similarities and differences between microprocessors and microcontrollers and their applications.
4. Interpret and write simple programs for a microcontroller system.
5. Describe the microcontroller architecture and use the instruction set of a representative microcontroller.
6. Explain input/output and interrupt operations in a microcontroller system.
7. Describe the interfacing basics of a microcontroller system.
8. Present oral and written information concerning microcontrollers, their operation and applications.
9. Demonstrate professionalism necessary within the industry.
10. Demonstrate the capacity to integrate quality improvement throughout the education process.

GRADING CRITERIA:

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<tr>
<th>Area</th>
<th>Approximate Points</th>
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<tbody>
<tr>
<td>Attendance/Labs</td>
<td>500</td>
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<tr>
<td>Homeworks/Quizzes</td>
<td>200</td>
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<tr>
<td>Exams</td>
<td>100</td>
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<tr>
<td>Final Project</td>
<td>200</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1000</strong></td>
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Late work & Absences
Generally, late work will not be accepted, nor can in-class assignments be made up. Missed exams can only be made up if arrangements are made prior to exam dates except in the event of an emergency. Students will be penalized 1% of their total grade for each day absent.

Final Project
The student will develop a project of their own design and invention to be presented and submit full documentation. More on the project will be discussed later in the course.

**GRADING SCALE**

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<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90% - 100%</td>
<td>A</td>
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<tr>
<td>80% - 89%</td>
<td>B</td>
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<td>70% - 79%</td>
<td>C</td>
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<td>60% - 69%</td>
<td>D</td>
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<td>&lt; 60%</td>
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A grade of Incomplete (Inc) may be assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all required assignments. All incomplete grades must be documented on the prescribed form.

**Final Exam:** Tuesday, May 12th, 2:45-4:45

**Academic Dishonesty:**
Students may be subject to disciplinary proceedings resulting in an academic penalty or disciplinary penalty for academic dishonesty. Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism, or collusion.

**ADA Statement for Students Requiring Special Accommodations:**
As per 504 of the Vocational Rehabilitation Act of 1973 and the American Disabilities Act (ADA) of 1990, if accommodations are needed, inform the instructor or program advisor as soon as possible.

**EMERGENCY PROCEDURES**
Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on the BERT website at [www.bert.siu.edu](http://www.bert.siu.edu), Department of Public Safety’s website at [www.dps.siu.edu](http://www.dps.siu.edu) (disaster drop down) and in Emergency Response Guidelines pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. **It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency.** The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.