### Syllabus

**Electronics Lab IV**

**Engineering Technology Department**

**William States Lee College of Engineering**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ETEE 2201</td>
<td>Electronics Lab IV</td>
<td>3</td>
<td>1</td>
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</table>

**Contact/Instructor Information:**

- **Instructor:** Steve Kuyath
- **Office:** Smith 336
- **Phone:** 704.687.4799
- **Fax:** 704.687.6499
- **Email:** SJKuyath@uncc.edu (preferred method)
- **Office Hours:** By Appointment or when my office door is open

**Prerequisites (or corequisite):** ETEE2213: Introduction to Microprocessors

**Course Description:**

Experiments that support the concepts and practices covered in ETEE2213 (Introduction to Microprocessors): Introduction to microprocessor architecture and microcomputer systems including memory and input/output interfacing, assembly language programming, bus architecture, bus cycle types, I/O systems, memory systems, and interrupts. This course meets for three (3) laboratory hours per week. One (1) credit hour.

**Textbook/References:**

- AVR Technical Data Manual
- AVR Evaluation Board Reference Manual

**Goals:**

This course is intended to reinforce concepts introduced in ETEE2213. Through hands-on experience with microprocessors and microcomputer systems, students will gain a deeper understanding of the interrelationship and interdependence of system components and functions. Students are also required to submit components of a written technical report and make a formal oral presentation on a technical subject related to microprocessors. Written assignments will be evaluated by an English grader for composition and by the instructor for technical content.

**Topics:**

Experiments performed in this course are determined by material introduced in ETEE2213. Topics may include, but are not limited to:

1. Assembly Language Programming
2. Serial and Parallel I/O
3. Analog to Digital and Digital to Analog Conversions

**Outcomes**

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

1. Demonstrate proficiency in the assembly, troubleshooting, analysis and documentation of experimental procedures.
2 Demonstrate proficiency in serial and parallel data transmission.
3 Display understanding of interfacing memory circuits with a microprocessor

Note: Course Outcomes 1 through 3 above support achievement Program Outcomes 1, 3 and 6.

Computer Usage
Extensive use of text editors, assemblers, and assembly language simulation tools will be used, in addition to various word processing, analysis, graphics and presentation software

Examinations/Projects:

Lab Reports:
Lab reports consist any technical documentation, answers to questions, and a short summary of what was learned in the assignment.

Formal Reports:
Three assignments will require a formal report. The formal report must include the following sections:
1. Title Page
2. Abstract or Summary
3. Introduction or Background Information
4. Equipment List, Methods, or Materials
5. Detailed Procedure
6. Results
7. Discussion or Analysis of the results
8. Conclusion
9. Bibliography

All references must be cited with a full bibliography (in any report/homework submitted). The style guide used by several faculty in the Engineering Department can be found on my website. The formal reports will be graded for technical writing skills, by an English grader (50%) and for technical accuracy (50%).

Presentation:
Each student must present a formal oral report on a topic related to microprocessors. Students may choose to report on one of the assignments performed in the lab.

Grade Calculation:

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<tbody>
<tr>
<td>Lab Reports</td>
<td>55%</td>
</tr>
<tr>
<td>Formal Report (3)</td>
<td>30%</td>
</tr>
<tr>
<td>Presentation</td>
<td>15%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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Late Policy:
Lab Assignments are due at the specified time. A penalty of 25% will occur for each day late.

Grade Assignment:

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<tr>
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<tbody>
<tr>
<td>90% - 100%</td>
<td>A</td>
</tr>
<tr>
<td>80% - 89%</td>
<td>B</td>
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<tr>
<td>70% - 79%</td>
<td>C</td>
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<tr>
<td>60% - 69%</td>
<td>D</td>
</tr>
<tr>
<td>0% - 59%</td>
<td>F</td>
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Last Updated: January 2008
Academic Integrity:

All students are required to conform to the guidelines set forth by the UNCC Code of Academic Integrity. Each student is to be the sole contributor to all work submitted in this course. Where instances of cooperation between students (Complicity) are detected, the lowest grade obtained by the participants is divided among them. The instructor will determine the distribution of the single grade. Where evidence of copying (Plagiarism) is detected, the student will be given an F in the course with a report filed with the Dean of the College and documented in the student's records. Submitting of another student's work will not be tolerated under any circumstances. The college catalog describes the code of academic integrity. Pay particular attention to those standards referred to as Complicity (cooperation between students) and Plagiarism (submitting another student's work). A full explanation of these definitions, and a description of the procedures used in cases where student violations are alleged, is found in the complete text of The UNCC Code of Student Academic Integrity. This Code may be modified from time to time. Users are advised to contact the Office of the Dean of Students to assure they consult the most recent edition.