

# **ECE 594, Microprocessor-Based System Design, Fall, 2023**

## **ECE 594L, Microprocessor System Lab, Fall, 2023**

- Instructor: Abu Asaduzzaman (DRZ)
- Department: Electrical and Computer Engineering (ECE)
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- Preferred Method of Contact: In person during office hours or e-mail
- Classroom, Day/Time: 1.3056 NetApp, Monday and Wednesday 12:30-1:45 PM
- Student/Office Hours: MW 8:00-9:30 AM (303-WH)
- Lab, Day/Time: 262JBC, Monday 3:45-6:15 PM
- Prerequisites: ECE 238, ECE 394
- Teaching Assistant (TA): Lab – Nowshin Nawal | Grading – DRZ
- TA Contacts: Lab – [nxnawal@shockers.wichita.edu](mailto:nxnawal@shockers.wichita.edu)

### **How to use this syllabus**

This syllabus provides you with information specific to this course, and it also provides information about important university policies. This document should be viewed as a course overview; it is not a contract and is subject to change as the semester evolves. Any changes should be shared via lecture and/or Blackboard.

### **University Policies and Procedures**

The Wichita State University Policies and Procedures Manual can be found at: <https://www.wichita.edu/about/policy/>.

### **Academic Integrity**

Students at Wichita State University are expected to uphold high academic standards. WSU will not tolerate a lack of academic integrity. Students are responsible for knowing and following the Student Code of Conduct [http://webs.wichita.edu/inaudit/ch8\\_05.htm](http://webs.wichita.edu/inaudit/ch8_05.htm) and the Student Academic Honesty policy

If there are homework (HW) assignments in this course, each HW will be an individual assignment (unless otherwise stated). Students can discuss with others, but they should not write the solution together; one submission (wording/coding) should be reasonably different from other submissions. "Collaboration is good, cheating is not!" There will be



## Response Time

### To Email and Discussion Forum Questions:

As soon as possible within 24 hours. If you do not receive reply to your email within 24 hours, please re-send me the email, probably the email did not arrive to my Inbox.

### Feedback on Assignments:

As soon as possible after the due date including the late submission date/time. Answer key will be discussed in lecture sessions and/or shared via Blackboard.

## Grading Scale

WSU uses a +/- grading scale for final grades and to calculate grade point averages. In this class, grades are assigned according to the following chart. Other classes might assign grades differently: Be sure to understand the grading scales in all of your classes.

Points/Percentage	Letter Grade	Grade Points	Interpretation
93 and up	A	4.00	A range denotes excellent performance
90 – less than 93	A-	3.70	
87 – less than 90	B+	3.30	
83 – less than 87	B	3.00	B range denotes good performance
80 – less than 83	B-	2.70	
77 – less than 80	C+	2.30	
73 – less than 76	C	2.00	C range denotes satisfactory performance
70 – less than 73	C-	1.70	
67 – less than 70	D+	1.30	D+

## **Assignments (and Grading Scale)**

List of grading assignments/components and

The Lab TA should be in the lab for the entire session to assist students and grade lab assignments. The Grading TA (if any) should grade test papers. However, the TAs are not allowed to solve student problems (any problem). If students have any questions regarding the course materials and/or laboratory assignments, they should immediately contact the course instructor.

## **Syllabus Policies and Student Resources**

All students should familiarize themselves with the course-related policies and student resources that can be found at: [www.wichita.edu/syllabuspolicies](http://www.wichita.edu/syllabuspolicies)

These include, but may not be limited to:

- Academic Integrity
- CARE Team
- Concealed Carry Policy
- Counseling and Prevention Services
- COVID-19 Conditions
- Definition of a credit hour
- Disability Services
- First Generation Students

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adapions of teaching methods, class materials or testing may be made on a case-by-case basis if warranted, as required by the Americans with Disabilities Act (ADA). All information and documentation of your disability is confidential and will not be released by ODS without your written permission.

## Respect for Diversity

Wichita State University is committed to being an inclusive campus that reflects the evolving diversity of society. To further that goal, Wichita State University does not discriminate in its employment practices, educational programs or activities on the basis of age (40 years or older)2 Tw 04 ( y)1. (he)1Td(T)-5 (otl)6 ( )TJ (o b),v9-3( di)6 (s)4 (bi)6 (l)6

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### Programming Microprocessor Systems using C/C++ language

- Review C/C++ Language using CodeWarrior IDE and DEMOEM board
- Programming Timer, Sensor, liquid crystal display (LCD), etc.

### Embedded / IoT Systems

- Fundamental concepts and future of Embedded Systems
- Fundamental concepts and future of Internet of Things

### Project/Research

- Sensing/Monitoring/Controlling Systems
- Low-Power Computing Systems

## Tentative Schedule

Week Mon	Note	Important topics/readings, assignments, due dates, and reminders are listed here so that you can organize your time and academic work.
1 8/21		ECE 594/594L: Course syllabus; <a href="#">Labs</a> and <a href="#">Projects</a> ; K-probe; Microprocessors: Internal Architecture: Hardware/Software;
2 8/28	<a href="#">Lab</a>	IDE68K Assembly Language; Main Routine and Subroutines; <a href="#">s</a>

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Week Mon	Note	Important topics/readings, assignments, due dates, and reminders are listed here so that you can organize your time and academic work.
12 11/06	Lab	Lab-08 (Mon); LCD Display; <b>Project: Report and Presentation</b> ; Internet of Things (IoT) technology; Quiz-3/Lab-09 discussion;
13 11/13	Lab Quiz	Lab-09 (Mon); Serial/Parallel I/O; Programming sensors; Quiz-3 (Wed, 30 pts, 30-min); Lab-10 discussion;
14 11/20	Lab Thx-Brk	Lab-10 (Mon); <b>Project: Presentation and Report</b> ; <b>11/22 (Wed) to 11/26 (Sun) (Thanksgiving Break) No Class;</b>
15 11/27	Project	Project <b>Presentation</b> : Team-work, slides, in-person; <b>Final Report</b> : Team-work, via Blackboard on Friday;
16 12/04	Exam	Future of IoT Microprocessor-