Course Syllabus

CE-320 Microcomputers I

Winter 2023

**Course**: CE-320 - Microcomputers I

*Lecture schedule*: Mondays and Thursdays 10:15 AM – 11:45 AM, Rm. AB 1815

*Lab schedules*: Wednesdays 10:15 AM – 12:20 PM (Dr. Ghamari)

*Lab location*: Rm. AB 2-823

**Instructor**: Dr. Mohammad Ghamari

*Office:* 2703 AB

*Hours:* By appointment only

*Email:* mghamari@kettering.edu

*Phone:* 810-762-7990

**Overview**: This course covers the fundamentals of the very important field of microcomputers. Microcomputers are found in devices from microwave ovens to desktop computers to cars to cell phones. This class will cover topics of machine language, structured assembly programming, subroutines, interrupts, and basic C programming. An understanding of microcomputers is necessary to debug current systems, develop specifications for new chips, and use any already available microcomputer in our system designs. Although the concepts covered apply to an extremely large number of different microcomputers, we will primarily use the Freescale HCS12 microcontrollers as the focus for examples.

**Recommended books**

Software and Hardware Engineering: Assembly and C Programming for the Freescale HCS12 Microcontroller, 2nd edition, by Fredrick M. Cady, ISBN: 9780195308266

**Homework**: Homework is fully the responsibility of the student. Homework exercises will become available on Blackboard as the material is covered in class. Each homework exercise is released as two files: one contains problems and the other contains the answers. It is *strongly* recommended that you attempt to complete the problems on your own first without looking at the answers.

**Peer teaching**: This course expects students to be actively involved in their learning. The instructor will not be the only person teaching. Students are to choose a topic of their interest from a given list, thoroughly study, understand and teach the material to the class. Among the list of topics will be several HCS12 peripheral modules and software libraries. The list will be announced by **4th week Friday**, and students will be expected to make your choice by **5th week Monday**. More details will be provided in class as the time approaches.

**Quizzes**: All quizzes are taken at the beginning of class. Each quiz is based primarily on the corresponding homework assignment and the related lectures and reading assignments. Since the topics covered in the course typically require an understanding of the preceding material a few questions from previous quizzes should be expected.

**Exams**: There will be a midterm exam tentatively scheduled for 6th Friday, and a final exam.

**Grading**: The overall grade for the course is calculated as follows:

Quizzes 30%

Midterm 15%

Peer Teaching 10%

Final Exam 30%

Laboratory (from CE-320L) 15%

100%

**Grading scale:**

A >= 93; A- >= 91; B+ >= 87; B >= 85; B- >= 83; C+ >= 79; C >= 75; C- >= 69; D+ >= 65; D >= 60; F < 60

## Tentative Schedule: Will be posted as a separate file on Blackboard.

**Responsibilities**:

The following describes what is expected of a **student** who wishes to do well in the course.

* Attend class regularly and inform the instructor in advance if you must miss a lecture.
* Actively engage in classroom activities: through discussions, questions and answers, and working on the class exercises.
* For effective utilization of the class time, students need to come prepared to class on the material to be covered for each day, by reading the textbook and lecture notes available on Blackboard.
* Spend on average 2 to 2.5 hours per hour of class on activities outside the classroom. These activities include reading the textbook, reviewing class notes, completing homework assignments, reviewing the course objectives, seeking help from tutors and/or the instructor, etc.
* Begin working on the homework shortly after it is released. This will enable you to better understand the lectures and class discussions.
* Monitor your performance in the course from your results in quizzes, exams & labs.

The following is a list of responsibilities that you may expect from the **instructor**.

* Serve as an effective facilitator of course learning. Make students aware that they are not here to passively receive knowledge. They must be **active participants** in their learning.
* Provide presentations and offer classroom activities that engage students to effectively learn the course materials.
* Be available outside of class for explanations and answers tailored to individual students.
* Grade quizzes and exams promptly to keep each student’s progress up to date.
* Make the student aware of the learning objectives and provide assignments that both teach basic use and application of the objectives.

**Laboratory**. There will be the same syllabus for the lab portion distributed in lab.

**Attendance**. Regular attendance with active class participation is a must if you wish to do well in the course. You will take responsibility for any missed information, lectures, classroom exercises, exams, labs, etc. during your absence without a legitimate reason supported with proper documentation.

**Statement on Students with Documented Disabilities**

The University will make reasonable accommodations for persons with documented disabilities. Students need to register with the Wellness Center every term they are enrolled in classes. To be assured of having services when they are needed, students should contact the Wellness Center during the first week of each term. Note that it is the student’s responsibility to arrange accommodations with each professor. For more information on “Disability Services,” refer to the Student Life section of the [Undergraduate Catalog](http://catalog.kettering.edu/undergrad/student-life/) or the [Disability Services Handbook](https://www.kettering.edu/sites/default/files/disabilityserviceshandbook.pdf).

# Statement on Ethics in the University and Academic Integrity

Kettering University values academic honesty and integrity. Cheating, collusion, misconduct, fabrication, and plagiarism are serious offenses. Each student has a responsibility to understand, accept, and comply with the University’s standards of academic conduct as set forth in our statement, “Ethics in the University,” and “Academic Integrity” as well as policies established by individual professors. For more information, refer to the [Undergraduate Catalog](http://catalog.kettering.edu/undergrad/conduct/). This information is also noted in the Student Handbook.