

Syllabus: ET790 Microcomputer Technology (M1 + LM1)

COURSE DESCRIPTION:

This course explores modern microcontrollers (MCUs) designed for various embedded systems. The course will cover today's MCU structures and organizations, their instruction set architectures, and programming styles, especially those in the C programming language, which is very popular in programming embedded systems. The course will also cover various mixed-signal and digital components integrated on MCUs.

The laboratory exercises use the Texas Instruments MSP430 microcontroller and the C programming language. Each topic provides various concepts and practices for a solid design foundation in embedded systems. The final project is designed to explore some advanced design topics.

PREREQUISITE: ET671

CREDITS: 4.0

TERM: Fall 2025 (8/25/25 – 12/8/25)

DEPARTMENT/PROGRAM:

Department of Applied Engineering and Sciences/Engineering Technology

REQUIRED TEXTBOOK:

No textbook will be used, but there are several suggested readings posted on Canvas.

INSTRUCTORS:

Lecture & Laboratory: Takahide Ohkami, Ph.D. Lecturer
Email: Takahide.Ohkami@unh.edu
Office: P119

LECTURE AND LABORATORY SCHEDULE:

| | | | |
|-------------|------------------|-------------------|--------|
| Lecture: | Tuesday/Thursday | 5:10 pm – 6:30 pm | @ P126 |
| Laboratory: | Tuesday | 6:40 pm – 8:30 pm | @ P114 |

OFFICE HOURS:

Please contact the instructor by e-mail or in-person.

COURSE FORMAT:

This course is an in-person on-campus course for lectures and laboratory. There is no remote attendance option. You are expected to attend the lectures and laboratory sessions. If you miss many lecture and laboratory classes without any notice, you may get a grade of AF (Administrative F) at the discretion of the instructor. Please see [UNH Attendance Policy](#).

If you have to deal with an unexpected extenuating circumstance that will keep you out of class or affect your performance for more than a day or two (e.g., test positive for COVID-19), please reach out to Lisa Enright, Assistant Dean of Student Success, at lisa.enright@unh.edu to request a letter to be sent to all the course faculty.

If you are required to miss significant class time, you will be provided temporary academic support so that you can continue to make satisfactory progress in this course. Please contact the course instructor to discuss the specific type of support to be implemented during your absence.

HOMEWORK ASSIGNMENTS:

The homework assignments shall be completed individually by each of you. They will be posted on Canvas along with the due and closing dates. You will submit each assignment typed in a separate answer sheet file on Canvas by the closing date. The solutions will be posted on Canvas after the closing date. The late work submitted after the due date before the closing date will lose 10% of the full score. Once the solutions are posted, no late work will be accepted without any exceptions. The unreadable answers may not be graded. Please note that the instructor will never accept the submission by email.

LABORATORY REPORTS:

All the laboratory reports will be formal and expected to be submitted by the specified due/closing date. The late laboratory reports will lose some points.

GRADED DISCUSSIONS:

Each discussion topic will be posted on Canvas along with the due date. You are expected to make one post on the specified topic and make a comment on the other post. All the posts and comments are expected to be technical.

MIDTERM EXAMINATIONS:

Two mid-term examinations will be given at a lecture class time in October and November. These examinations are the take-home open-book examinations that will be posted on the specified dates. You will have one day to finish and submit the answers typed in a single answer

sheet file on Canvas by the end of the posted day. The unreadable answers may not be graded. The solutions will be posted on Canvas. You are not allowed to discuss the examination problems or answers with other people.

If you need to miss an examination for any reason, the instructor must be notified before the examination date. If you miss an examination without prior notification, you will receive a grade of zero (0), with no exceptions.

In the case of the extreme circumstance of the examination missed without prior notification, you must contact the instructor within 24 hours of the missed examination and submit a written document to explain why the examination was missed. The instructor will determine if a modified examination will be given in place of the missed examination.

FINAL EXAMINATION:

There will be no final examination.

GRADING WEIGHTS:

| | |
|--------------------------|-----|
| Homework Assignments (6) | 20% |
| Graded Discussions (6) | 10% |
| Midterm Examinations (2) | 30% |
| Laboratory Reports (7) | 40% |

FINAL GRADE MODE: Letter Grading

| | | |
|---------------------------------|---------------------------------|---------------------------------|
| A: $94 \leq \text{Score}$ | A-: $90 \leq \text{Score} < 94$ | |
| B+: $87 \leq \text{Score} < 90$ | B: $84 \leq \text{Score} < 87$ | B-: $80 \leq \text{Score} < 84$ |
| C+: $77 \leq \text{Score} < 80$ | C: $74 \leq \text{Score} < 77$ | C-: $70 \leq \text{Score} < 74$ |
| D+: $67 \leq \text{Score} < 70$ | D: $64 \leq \text{Score} < 67$ | D-: $60 \leq \text{Score} < 64$ |
| F: $\text{Score} < 60$ | | |

CREDIT HOUR POLICY:

The University of New Hampshire is in compliance with the federal definition of credit hour. For each credit hour, the University requires, at a minimum, the equivalent of three hours of student academic work each week assuming a 15-week semester. Academic work includes, but is not limited to, direct faculty instruction, e-learning, recitation, laboratory work, studio work, fieldwork, performance, internships, and practica. Additional academic activities include, but are not limited to, readings, reflections, essays, reports, inquiry, problem solving, rehearsal, collaborations, theses, and electronic interactions. Student work reflects intended learning outcomes and is verified through evidence of student achievement.

NOTES:

If you have questions during the semester, please feel free to ask the instructors. If you are experiencing difficulties, please let the instructors know as early as possible.

COVID-19:

Due to the COVID-19 pandemic and current federal, state, CDC, and UNH rules and regulations, the course format may change at any time during the semester. It is important for you to read and look for UNH COVID-19 Updates as well as check your UNH student email account and the Canvas course site.

ACADEMIC HONESTY:

In the preparation and presentation of any assigned work – including examinations, tests, quizzes, term papers, reports, papers, and other written or oral exercises – every student shall conform to a strict standard of academic honesty. Any attempt to deceive a faculty member or to help another student do so will be considered a violation of this standard.

In all assignments, students must acknowledge the words and/or ideas of others taken from print or electronic media, whether a direct quotation or a paraphrase; any omission of this is dishonest. Cheating on examinations or tests consists of knowingly giving, receiving, or using – or attempting to give, receive, or use – unauthorized assistance during an examination or test.

A faculty member may record a grade of “zero” for any assignment on which a student has plagiarized or cheated. For repeat offenses within a single course, the faculty member may record a grade of “F” for the course. Violations of this policy in multiple courses may result in dismissal from the college. Please see [UNH Academic Honesty Policy](#).

STUDENTS WITH DISABILITIES:

The University of New Hampshire at Manchester is committed to providing students with disabilities equal access to all learning experiences, programs, and facilities of the University. Student Accessibility Services (SAS) supports this commitment by assisting students across UNH campuses with the interactive accommodation process. This can include academic, housing, dining, and other types of accommodations and supports.

If you are a student with a documented disability or believe you may have a disability that requires accommodations, please contact the UNH Student Accessibility Services (SAS) at 603-862-2607 or sas.office@unh.edu for an accommodation letter.

UNH STATEMENT ON EMOTIONAL OR MENTAL HEALTH DISTRESS:

In partnership with The Mental Health Center of Greater Manchester, UNH Manchester offers consultation visits in the Academic Advising department (located in the Student Services suites, 4th floor). Services include:

- Free confidential screening & consultation with a licensed mental health therapist.
- Referrals to mental health or substance misuse treatment.
- And assistance in understanding how to afford additional treatment (with or without insurance!) or find free services.

If you would like to connect to counseling services directly, you may do so by contacting The Greater Manchester Mental Health Center at (603) 668 - 4111. If you or someone you know is experiencing a mental health or substance misuse crisis, please contact the Mobile Crisis Response Team (MCRT) at (800) 688 - 3544.

The National Suicide Prevention Lifeline provides 24/7, free and confidential support via phone or chat for people in distress, resources for you or your loved ones, and best practices for professionals. Call (800) 273-TALK (8255).

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