



CPET-251 Microcontroller Systems Spring 2020

Class Meeting:

Section 01 MWF 08:00 - 08:50 AM in ORN-1340

Section 03 MWF 10:00 - 10:50 AM in INS-1080

No classes 1/20, 3/16-3/20

Instructor:

Holly Dickens

Office: GOL-1345

Office hours: Schedule posted on mycourses

Email: hldiee@rit.edu - Please use your RIT email account when sending emails.

Course Description:

This course studies the structure and applications of microcontroller systems. Emphasis will be on: hardware architecture and structures, programming, memory organization/mapping, system timing, typical peripherals and interfacing, the interrupt structure, input/output methods, small system design and applications. .

Pre-Requisite: CPET-121 Computational Problem Solving I

Co-Requisite: CPET-252 (Microcontroller Systems Lab)

Intended Learning Outcomes:

1. Explain the differences between microprocessors, microcontrollers and microcomputer systems.
2. Understand particular microcontroller architecture and how it can be programmed.
3. Explain the hardware and software features of a microcontroller system.
4. Understand efficient C language solutions that implement the design intent.
5. Understand functions and subroutines, their implications on the stack structure and how parameters are passed and returned.
6. Understand how interrupts are processed and serviced.

Course Grading Policy:

- Weekly Homework Assignments 15%
Homework will be assigned and collected on Wednesdays. Each assignment will be graded for completeness and accuracy. Some assignments will be individual and some will be completed in groups. Students will be assigned to homework groups and are expected to work together in completing the group homework assignments.
- Quizzes and in-class activities 15%
Announced and unannounced quizzes will be given periodically and will be based on the homework assignments. Quizzes cannot be made up unless **prior** arrangements are made. Additionally, there will be in-class activities that will be graded for completeness. You are encouraged to bring your laptop to class for completing the activities.
- Hour Exams (3) - 40%
There will be three one-hour exams given during the quarter. The dates for the exams are: **2/7, 3/6, and 4/10**. The exams will be given during lecture section. Make-up exams will only be allowed for extenuating circumstances. If you have a conflict, please make arrangements **prior** to the exam date.



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- **Final Examination - 30%**
The final examination day and time will be posted on SIS later in the semester. Final exam times are set by the university and cannot be changed. As such, do not make travel plans until the exam date is finalized.
- **Class Participation and Attendance**
Class attendance and participation are critical for success in this class. As such, attendance is required and will be taken each day. There are 42 class meetings and you are allowed 2 unexcused absences. More than 2 unexcused absences will result in a reduction of your final grade. Your final grade will be determined as follows:
final grade = (# of classes attended/40) * grade earned
- **Final Letter Grade**
Your final letter grade is determined as follows:

Class Average Range	Grade
93.00 - 100.00	A
90.00 - 92.99	A-
87.00 - 89.99	B+
83.00 - 86.99	B
80.00 - 82.99	B-
77.00 - 79.99	C+
73.00 - 76.99	C
70.00 - 72.99	C-
60.00 - 69.99	D
0 - 59.99	F

Course Supplies:

- Textbook: None
- Binder for lecture notes and pdf storage. Lecture notes will be posted prior to class time. It is advised that you print and use them as a template for notetaking in class.
- A laptop is not required, but if you have one, you are encouraged to bring it to class.

Academic Accommodations:

"RIT is committed to providing reasonable accommodations to students with disabilities. If you would like to request accommodations such as special seating or testing modifications due to a disability, please contact the Disability Services Office. It is located in the Student Alumni Union, Room 1150; the Web site is www.rit.edu/dso. After you receive accommodation approval, it is imperative that you see me during office hours so that we can work out whatever arrangement is necessary."



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Academic Dishonesty:

Students are encouraged to study together, but must do their own work. **All students are required to submit original work. It is Plagiarism in any form will not be tolerated.** All work is to be performed individually. At a minimum, plagiarism will result in a grade of 0% for that assignment as well as documentation of such being entered into the students' permanent records. Repeated incidents of plagiarism will result in failure of the class.

Discrimination and Harassment Policy:

RIT is committed to providing a safe learning environment, free of harassment and discrimination as articulated in our university policies located on our [governance website](#). RIT's policies require faculty to share information about incidents of gender based discrimination and harassment with RIT's Title IX coordinator or deputy coordinators, regardless whether the incidents are stated to them in person or shared by students as part of their coursework.

If you have a concern related to gender-based discrimination and/or harassment and prefer to have a confidential discussion, assistance is available from one of RIT's confidential resources on campus (listed below).

1. The Center for Women & Gender: Campus Center Room 1760; 585-475-7464; CARES (**available 24 hours/7 days a week**) Call or text 585-295-3533.
2. RIT Student Health Center – August Health Center/1st floor; 585-475-2255.
3. RIT Counseling Center - August Health Center /2nd floor - 2100; 585-475-2261.
4. The Ombuds Office – Student Auxiliary Union/Room 1114; 585-475-7200 or 585-475-2876.
5. The Center for Religious Life – Schmitt Interfaith Center/Rm1400; 585-475-2137.
6. NTID Counseling & Academic Advising Services – 2nd Floor Lynden B. Johnson; 585-475-6468 (v), 585-286-4070 (vp)

RIT Resilience:

Success in this course depends heavily on your personal health and wellbeing. **Recognize** that stress is an expected part of the college experience, and it often can be compounded by unexpected setbacks or life changes outside the classroom. Your other instructors and I strongly encourage you to **reframe** challenges as opportunities for growth. **Reflect** on your role in taking care of yourself throughout the term, before the demands of exams and projects reach their peak. Please feel free to **reach out** to me about any difficulty you may be having that may impact your performance in this course as soon as it occurs and before it becomes unmanageable. In addition to your academic advisor, I strongly encourage you to contact a number of other support services on campus that stand ready to assist you.

Academic Support Center 585-475-6682
Center for Religious Life 585-475-2135
Center for Women and Gender 585-475-7464
Counseling and Psychological Services 585-475-2261
Disability Services Office 585-475-2023
International Student Services 585-475-6943
Student Health Center 585-475-2255
University Writing Commons 585-475-2444