CMPE 110
Introduction to Computer Engineering
Fall 2021 Syllabus

Lecture:	01	Tu	2:00–3:15 p.m.	LBR A-205	Yang
Lab:	L1	Tu	5:00–6:55 p.m.	ENG(17)-2560	Lange
	L2	Tu	7:10–9:05 p.m.	ENG(17)-2560	Lange
	L3	We	5:00–6:55 p.m.	ENG(17)-2560	Gallina
	L4	We	7:10–9:05 p.m.	ENG(17)-2560	Gallina
	L5	Th	5:00–6:55 p.m.	ENG(17)-2560	Byers

Prof. Yang
Email: jay.yang@rit.edu
Online Discussions: Slack (rit-cmpe-110-1-2211.slack.com: request access w/ RIT account)
Office Hour: Tuesdays before and after lecture (1-1:50pm and 3:30-4pm) @ GLE(09)-3435
Note: Official announcements will be via news and emails set up in myCourses. Students are responsible to ensure messages sent through myCourses are received and frequently checked.

Description: This course overviews the field of computer engineering, the computer engineering curriculum at RIT, and the research and career opportunities. The topics covered include basic circuit analysis, number systems, digital logic, computer organization, C programming, robotics, laboratory equipment, teamwork, critical thinking, technical writing, modern and contemporary issues, ethics, diversity, and communication skills. (Prerequisite: RIT CMPE freshmen standing or by permission) (1 class hour; 2 laboratory hours; 1 credit hour)

Learning Objectives: (At the end of the class, the students are expected to be able to…)
- Demonstrate basic electrical signal measurements using lab equipment.
- Identify basic concepts of electrical circuits and perform basic circuit analysis.
- Describe basic concepts of number systems, digital logic and computer organization.
- Utilize an embedded platform to control a robot with C programming and sensor interfaces.
- Develop an understanding and practices of engineering teamwork.
- Begin to provide critical assessment of computer engineering technologies.
- Develop an appreciation for professionalism, diversity, and ethics, as well as contemporary, global, and societal issues.

Course Format: This course will have a lecture component and a series of lab exercises. The labs provide hands-on experience in various computer engineering topics, and the lectures offer a discussion forum for students to obtain and exchange fundamental knowledge complementary to the laboratory exercises. Students are expected to read the material provided in the "Content" tab in myCourses associated with each lab and lecture. There are six biweekly lab exercises beginning in Week 2 of the fall semester. During the off-week of scheduled lab time, students will attend the mentoring session in the lab with the TAs/Mentors. During the scheduled lecture time, the instructor will alternate between lecture-type of presentations and interactive myCE activities. Please refer to the weekly schedule at the end of the syllabus for details.

Lecture and Lab Attendance (12%): Attendance for the lectures and laboratory exercises is *required*. Any student who cannot attend a particular lecture or lab MUST contact the corresponding instructor and TAs to make alternative arrangement prior to the lab/lecture meeting time, and provide documented excused absence within 48 hours after the lab/lecture meeting time (unless physically impossible to do so). The lab attendance will be taken by the TAs during each of the six lab exercises. The lecture attendance will be taken by Prof. Yang and his assistant instructor.

Participation and Contribution in Mentoring and myCE Sessions (12%): Students are expected to actively participate and contribute to the discussion in the biweekly mentoring sessions and the myCE sessions – see the weekly schedule at the end of the syllabus. The mentoring sessions shall provide students with both technical and non-technical guidance to succeed at RIT, including discussion of the contents learned in various courses as well as Co-op, research, study-abroad, and other extracurricular opportunities at RIT. Active participation and contribution for the mentoring sessions will be assessed by the Mentors, who are also the TAs for the labs. Active participation and contribution for the myCE sessions will be assessed by Prof. Yang and his assistant instructor.

Teamwork (8%): Computer Engineering students have many opportunities to work in an official or unofficial team settings. Students are expected to contribute in a team environment with positive and supportive attitudes, helping the team move towards a common goal. In CMPE 110, that includes the lab exercises, mentoring activities, myCE activities, and other discussion activities. Prof. Yang will set up an online teamwork evaluation for students to regularly assess each other's contributions in team activities. Prof. Yang will also consult with the lab instructors and the TAs/Mentors for exceptional and unacceptable behaviors when working in teams.

Written Assignments (20%): There are four written assignments for the students to complete and submit to myCourses as PDF files. The first homework involves a discussion with the Mentor. The second reflects the technical content learned in the lectures and labs. The third documents the myCE plan for what and how each student wants to do in the next few years at RIT to connect interests with curriculum, personal or team projects, Co-op, research, study-abroad, and/or other activities. The fourth assignment is for the students to reflect lessons learned (good and bad) throughout the first semester at RIT and outlook for the spring semester.

Laboratory Activity (48%): There are six biweekly laboratory exercises, with the first lab starting the second week of fall semester. Each lab will account for 8% of the total grade and students must complete the laboratory exercise and have the activity signed off by the lab instructor or the TAs. Students should refer to the specific lab policy provided by the lab instructor. The lab grades will be provided to Prof. Yang to compile the final course grade.

Academic Honesty: While students are strongly encouraged to exchange ideas and collaborate with each other to learn the course material, each student must individually complete work submitted for grading. No grading credit is earned for work not completed independently and completely by the individual student. In an official teamwork setting where one resulting work is being submitted, individual students must ensure to note who contributes what for the final work. Copying assignments (including notes and programs where various changes are made to make them "different") will not be tolerated; all students involved in such copying will receive a grade of zero for copied assignments, regardless of who copied from whom. If you have any questions

or concerns about this policy, please see the instructor to discuss it. All conduct in this course will be governed by the KGCOE Academic Honesty Policy and RIT Policies and Procedures. Additionally, it is expected that students will respect their peers and the instructors such that no one takes unfair advantage of anyone else associated with the course.

Weekly Schedule:

Week	Dates	Lecture (Tue)	Lab (Tue, Wed or Thu)	Biweekly Assignments
1	8/23–8/27	Overview	Get Lab Access (Rick Tolleson, GLE-3411)	
2	8/30–9/3	*myCE: Topics & Interests*	L1-Multimeter and Lab Equipment	*Post myCE Activity Survey*
3	9/6–9/10	Circuits and Digital Logic	*Mentoring Hour + Lab Makeup*	
4	9/13–9/17	*myCE: Courses & Career*	L2-Ohms Law and Lab Equipment	*HW1: Meeting with Mentors*
5	9/20–9/24	Number Systems and Programming	*Mentoring Hour + Lab Makeup*	
6	9/27–10/1	*myCE: Making Connections*	L3 Intro to C and C++	*Slack Discussion: CE Topics, Courses, Projects, & Career*
7	10/4–10/8	*Advising for Spring Registration	*Mentoring Hour + Lab Makeup*	
8	10/11–10/15	*(No Class) October Break*	*(No Lab) October Break*	*HW2: Circuits, Digital Logic, and Numbering Systems*
9	10/18–10/22	*myCE: Potential Project Ideas*	L4 C Bit Logic	
10	10/25–10/29	*RIT Grand Challenges	*Mentoring Hour + Lab Makeup*	*Discussion: How and Who to Work on What?*
11	11/1–11/5	*CE Undergraduate Research Opportunities	L5 Intro to Arduino and Robotics	
12	11/8–11/11	*myCE: Sharing of Plans*	*Mentoring Hour + Lab Makeup*	*HW3: myCE Plan and its Purposes (1-page)*
13	11/15–11/19	*Gender/Race/Culture Diversity Workshop	L6 Robot Servo	
14	11/22–11/26	*myCE: (Optional) Zoom Chat w/ Yang*	*(No Lab) Thanksgiving*	*(Break)*
15	11/29–12/3	Industry/Faculty Panel: myCE Project Showcase	*Mentoring Hour + Lab Makeup*	
16	12/6–12/10	*(No Class, No Exam)*	(No Lab)	*HW4: Reflection of First Semester at RIT (1-page)*

* Guest Lectures