UTRGV CMPE/ELEE 3331 SYLLABUS

Microcontroller and Embedded Systems Lab
Spring 2019
13:40 to 14:55 on Mon & Wed at ENGR1.290
15:05 to 17:45 on Mon & Wed at ENGR2.286 (Lab)

Dr. Mark Yul Chu
Phone: 956-665-2923, Email: mark.chu@utrgv.edu
Office & hours: ENGR 3.290 & 13:00 to 15:00 on Tu & Th

Textbooks and/or Resource Material
Lab handouts are distributed by instructor
Reference: ARM Assembly Language-Fundamentals and Techniques, William Hohl, CRC Press

Course Description and Prerequisites
Embedded systems with 8051 and Cortex-M ARM Microcontroller. Development Tools with uVision IDE and various labs with evaluation boards including Arduino Lab kits. Prerequisites: CMPE 3437 or CMPE 2333 with a grade of C or better.

Learning Objectives for Core Curriculum Requirements
At the end of the semester, it is expected that students should be able to:
1. Understand the basics of hardware and software design for microcontroller-based systems.
2. Understand how to integrate hardware and software for microcontroller applications systems.
3. Understand how to simulate and emulate peripherals by using development tools.
4. Be able to debug a microcontroller-based system and to analyze its performance using advanced debug tools.
5. Be able to develop, run, and experimentally validate code written in a high-level language for a microcontroller system.
6. Be able to understand how to access the memories of the Harvard architecture.
7. Be able to use modern tools of engineering practice

Grading Policies
Labs/Assignments 20% 100% - 90% A
Midterm I, II 40% 90% - 80% B
Final Exam 30% 80% - 70% C
Participation 10% (Green Slip Quizzes) 70% - 60% D
60% - 0% F
Total: 100%

Calendar of Activities
Include in this section a table or list that provides information for students regarding important dates, assignments or activities. The UTRGV academic calendar can be found at https://my.utrgv.edu/home at the bottom of the screen, prior to login. Some important dates for spring 2019 include:

January 14 First day of classes
January 17 Last day to add a course or register for spring 2019
January 21 Martin Luther King Jr. Day – NO classes
March 11-16 Spring Break – NO classes
April 10 Last day to drop a course; will count toward the 6-drop rule
April 19-20 Easter Holiday – NO classes
May 2 Study Day – NO classes
May 3-9 Final Exams
May 10-11 Commencement Exercises
Other Course Information
1. Late Assignments: Late assignments will not be accepted.
2. Make-up Tests: Make-up test will be given upon presentation of a note from a medical doctor stating that the student is unable to attend exam. Make-up test will be arranged before the test date.
3. Academic Dishonesty: I will enforce a zero tolerance policy. Period!

UTRGV Policy Statements

**STUDENTS WITH DISABILITIES:** Required on all syllabi. Do not modify. Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive academic accommodations should contact Student Accessibility Services (SAS) as soon as possible to schedule an appointment to initiate services. Accommodations can be arranged through SAS at any time, but are not retroactive. Students who suffer a broken bone, severe injury or undergo surgery during the semester are eligible for temporary services.

Pregnancy, Pregnancy-related, and Parenting Accommodations
Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting (reasonably immediate postpartum period) are encouraged to contact Student Accessibility Services for additional information and to request accommodations.

Student Accessibility Services:
Brownsville Campus: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at ability@utrgv.edu. Edinburg Campus: Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at ability@utrgv.edu.

**MANDATORY COURSE EVALUATION PERIOD:**
Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available on or about:

Full Spring Semester April 10 – May 1

**ATTENDANCE:** Recommended on all syllabi; may be modified by the instructor as long as it is not inconsistent with UTRGV policy.
Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

**SCHOLASTIC INTEGRITY:**
As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism (including self-plagiarism), and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.
SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE:
In accordance with UT System regulations, your instructor is a “Responsible Employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student's time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect that is free from sexual misconduct and discrimination. If students, faculty, or staff would like confidential assistance, or have questions, they can contact OVAVP (Office for Victim Advocacy & Violence Prevention) at 665-8287, 882-8282, or OVAVP@utrgv.edu.

COURSE DROPS:
According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

STUDENT SERVICES:
Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Students Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email (ucentral@utrgv.edu) or telephone: (888) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.

Students seeking academic help in their studies can use university resources in addition to an instructor's office hours. University Resources include the Learning Center, Writing Center, Advising Center and Career Center. The centers provide services such as tutoring, writing help, critical thinking, study skills, degree planning, and student employment. Locations are:
- Learning center: BSTUN 2.10 (Brownsville) or ELCTR 100 (Edinburg)
- Writing center: BLIBR 3.206 (Brownsville) or ESTAC 3.119 (Edinburg)
- Advising center: BMAIN 1.400 (Brownsville) or ESWKH 101 (Edinburg)
- Career center: BCRTZ 129 (Brownsville) or ESSBL 2.101 (Edinburg)