Syllabus[1]
TECH 4234
Microprocessor Interfacing Technology
Fall 2020
Ver 0.90

Class Information

Instructor

Instructor: Daniel Kohn
Email: dekohn@memphis.edu
Phone: 678-4515
Office: ET 218
Class Website: http://www.tech-uofm.info

Covid-19 Statement

As per Pres Rudd's email (July 30, 2020):

> *For the first month of the fall semester, curriculum delivery will be virtual/remote. We will reassess in early September and evaluate the possibility for some regular on-ground and hybrid courses to voluntarily return to campus if health data allows for a safe transition.*

For **this class** we will START the semester online via ZOOM during class time (with video recordings and materials to be made available after class). Labs kits will be made available to students (for pickup at UofM by appointment before the 2nd week lab time). The instructor will be available during lab time via Zoom to assist students with their circuits. Labs will be demoed via video (posted to Youtube) and the video link included in the lab write up. If UofM does reopens, the instructor will discuss options with the class before determining how we will proceed and then inform the class. Depending on multiple factors the class/lab might switch to hybrid, in class (with social distancing as required) or remain in a remote mode.

If the University of Memphis does reopen, the following policies will be in place:

COVID-19 Health and Safety Policy - Masks and Social Distancing

All students, faculty and staff will wear masks in all public spaces, including our classroom (lab) per the COVID-19 policy. The first time a student enters a classroom without wearing a face covering, the student will be asked to leave the class until they return a covering. Further violations will be referred to the Office of Student Accountability. Students who repeatedly or flagrantly violate these community expectations may be referred for discipline under the Student Code and, if appropriate, immediately removed from campus by the Dean of Students.

[1] Made Accessible with the help of ETSU's Accessible Syllabus Template

Student Health

Students who are experiencing symptoms such as sneezing, coughing or a higher than normal temperature should inform me by email so they can be excused from class and should stay home. Students should contact their health care provider or the Student Health Center at https://www.memphis.edu/health/.

Students who have a positive COVID-19 test should contact the Dean of Students at deanofstudents@memphis.edu.

[If the instructor is showing symptoms, an email will be sent to the class to specify if the class is be canceled or moved to zoom.]

Student Accommodations

If or when we return to class, students seeking to remain remote for health or other serious reasons should discuss their options with me. Students with accessibility issues or with other learning accommodation needs due to a disability should contact Disability Resources for Students (DRS) to submit an official request for course accommodations. Contact DRS at 901.678.2880 or at drs@memphis.edu. (https://www.memphis.edu/drs/index.php)

Student Resources

Students who need additional resources can contact the Dean of Students Office at https://www.memphis.edu/deanofstudents/crisis/index.php.

Lecture Meetings and Location

Classroom: ET 200 or ZOOM (see class website for link)

Class Meeting Schedule: Tuesday, Thursday 11:20am to 12:45pm

Lab Meetings and Location

Classroom: ET 227 or ZOOM (see class website for link)

Class Meeting Schedule: Tuesday 1:00pm to 3:45pm

Instructor Availability

I will be available during posted hours (see website) or by appointment for assistance, consultation and/or advisement

Course Information

Note: Since it is still possible for students enrolled in this course who were not REQUIRED to take TECH 3812 (Adv. Communications) some of those topics, effecting this class will be discussed as well.

Course Description and Purpose

Analysis and design of microprocessor-based systems utilizing various communication methods and protocols to create Internet of Things (IoT) systems and devices. PREREQUISITE: TECH 2831, TECH 3233, ~~TECH 3812~~ and TECH 3440.

Course Objectives

1. Demonstrate knowledge of the vocabulary of microprocessor communications methods.
2. Demonstrate knowledge of embedded system communications methods including Serial USART, SPI, I2C, Ethernet, etc.
3. Demonstrate knowledge interfacing various subsystems using communication methods commonly found in IoT systems.
4. Given a schematic, and C program, explain the purpose of any instruction in the context of the problem being addressed.
5. Build an IoT system using appropriate hardware and software based on system specifications and objectives.

Course Requirements

Required Textbook

The AVR Microcontroller and Embedded Systems Using Assembly and C: Using Arduino Uno and Atmel Studio by Sarmad Naimi and Muhammad Ali Mazidi 2nd Ed

Course Policies and Expectations

Communication

All assignments, handouts etc. will be distributed in electronic form from the instructor's website at:

http://tech-uofm.info/ (under the TECH4234 Link)

Additionally, e-mails will be sent to your University of Memphis e-mail account on occasion. [if you wish to use an e-mail account other than that provided to you by the University, you need to set up forwarding of your University e-mail to another preferred address]

Emailing Instructor

If you need to email the instructor for any reason, please:

- Write professionally (no slang, text message shortcuts, etc)
- Put the Class Number in the subject (eg "TECHxxxx – Request a meeting")
- If you are referring to an assignment or lab, include the number (eg "I have a question on Lab #3.")
- If you are requesting an appointment, please check the instructor's online schedule and include at least 3 possible meeting times/dates in your 1st email this will cut down on the number of emails to set up the appointment)

Attendance and Participation

~~Class attendance is mandatory. Students are responsible for all materials presented in class whether they have attended or not. If a student misses a class, lecture notes should be obtained from a fellow classmate, not from the instructor.~~

Due to covid-19, the attendance and participation policy has been suspended for this class **BUT** you are responsible for all material, assignments, and labs. If you choose to watch the videos instead of attending live via zoom, I will not be available to answer questions or provide additional insight if you do not understand what is presented, so attend class LIVE if at all possible.

Extra Credit

There will be opportunities for extra credit during the semester. Extra credit only applies once a student has proven proficiency in the class material by receiving a C- or above in the class.

Cell Phones

Disruptions to class meetings are to be avoided. For this reason, all cellular telephones are to be turned off before entering the classroom unless your equipment has an inaudible alert feature (vibratory alert). First infractions of this policy will result in a verbal warning; each subsequent infraction will result in a two-(2) percentage point penalty against your final course grade. If required, further action will be taken as outlined in the Student Handbook under the heading "Classroom Misconduct."

Disabilities

Any student who anticipates physical or academic barriers based on the impact of a disability is encouraged to speak with me privately. Students with disabilities should also contact Disability Resources for Students (DRS) at 110 Wilder Tower, 901.678.2880. DRS coordinates access and accommodations for students with disabilities.

Missed Tests and Quizzes

Quizzes cannot be made up for any reason. Tests can only be made up if the student contacts the instructor BEFORE THE START OF CLASS (via email, voicemail or phone) and only if the student provides a reason with proof (i.e. doctor's excuse, police report etc). The final exam cannot be made up for any reason. Failure to take a test is NOT grounds for a retest, and an F in the class will result.

Testing Policy

Before a test, students will be informed as to what resources will be available during the test such as calculators, notes, textbooks, formula sheets, etc. Using resources NOT allowed and will be treated as "Academic Misconduct."

Assignment Submission

Assignments are due at the beginning of the class period on the due date due (typically one week for labs, one class for assignments).

All assignments must be submitted as per instructions (ie: paper, electronic submission, or both).

- If an electronic submission is required, use the "Submit Assignment" link on the class website.

- If you need to resubmit an assignment, put a number after your name (eg Fred Smith 2) when resubmitting.

- If a technical issue occurs that prevents you from submitting an assignment via the web, please email it to me as an attachment and include in the message the reason (i.e. error message received) that prevented you from submitting it.

Late Assignments and Excused Absence

The instructor will work with student who need to turn in an assignment late or will not be able to attend the day of a test in cases of family emergencies, illness, work related activities, job interviews, etc (with some reasonable proof).

If you know you will be missing a class, inform the instructor via email (with the subject "Missing TECHxxxx on mm/dd/yy") before the class begins (and for scheduled absences, at least one week prior).

The instructor will not accept excuses such as "I work nights and overslept", "My computer crashed" (that is what back up are for), did not have access to required software (we have computer labs with all the required software available for student use), etc.

Late assignments (if accepted by the instructor) or electronic submissions submitted under the WRONG assignment name or having the wrong file extension will incur penalty as deemed appropriate by the instructor.

Grading

Since this will be a low enrolment class, Grades for the semester will be based on (subject to change):

Labs (including demo and Q&A)	50%
Journal	25%
Student engagement	10%
Final Project	15%

Final letter grades for the semester will be based on the standard grading scale as follows:

Grade	Percentage	Quality Points
A	>= 90%	4.00
B	>= 80	3.00
C	>= 70%	2.00
D	>= 60%	1.00
F	< 60%	0.00

Academic Misconduct

Academic Integrity

The Student Handbook of The University of Memphis states that students are expected to conduct themselves with personal and academic integrity. Regardless of these expectations, some students will still "cheat".

Academic Misconduct

The University of Memphis, Code of Student Rights and Responsibilities, defines academic misconduct as all acts of cheating and plagiarism. The full Code of Student Rights and Responsibilities may be found on the University web site by selecting Student Handbook. Academic misconduct will not be tolerated and such acts will result in the pursuit of the strictest possible sanctions against the student

The term "cheating" includes, but is not limited to:

a. Using any unauthorized assistance in taking quizzes or tests
b. Using sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments
c. Acquiring tests or other academic material before such material is distributed by the instructor
d. Misrepresenting papers, reports, assignments or other materials as the product of the student's sole independent effort
e. Failing to abide by the instructions of the proctor concerning test-taking procedures (examples include talking, laughing, failure to take a seat assignment, failing to adhere to starting and stopping times, or other disruptive activity)
f. Influencing or attempting to influence any University employee in order to affect a student's grade or evaluation
g. Any forgery, alteration, unauthorized possession, or misuse of University documents pertaining to academic scores, including late or retroactive "drop slips" and withdrawal application forms

The term "plagiarism" includes, but is not limited to, the use by paraphrase or direct quotation of the published or unpublished work of another person without full or clear acknowledgement. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

It is important for the student to understand that not only is the person who receives unauthorized help guilty of cheating and/or plagiarism so is the party who provides this help. For this reason it is important that you protect your own work so that you do not become an unintentional victim of cheating. DO NOT give others access to your computer files, printouts, lab reports or any other information. Computer printouts that you do not plan to use should be destroyed so that they can not be retrieved from trashcans. In addition, DO NOT save files on the hard drives of lab computers.

Sanctions for Academic Misconduct

Several sanctions are available for cases of Academic Misconduct. These range from exercise of summary discipline in which the student may receive a grade of "F" for either the assignment or the entire course, up to and including expulsion from the University.

Note

The instructor reserves the right to make changes in the above as needed. The instructor also reserves the right to refuse any sloppy, unorganized papers, homework, labs, programs, exams, etc. Take pride in your work and show me that you care. Strive for professionalism at all times.