TENNESSEE TECH UNIVERSITY

GENERAL AND BASIC ENGINEERING

ENGR1120-GSET PROGRAMMING FOR ENGINEERS

SUMMER 2022

Lecture: Monday, Tuesday, Wednesday, and Friday 8:30-9:30 AM, CLEM 407

Lab: Monday, Tuesday, Wednesday, and Friday 9:30-10:30 AM, CLEM 407

Final Exam: Thursday, June 30th, 8:30 AM-10:30 AM

INSTRUCTOR INFORMATION

Instructor's Name: Tristan Hill
Office: BRWN 305
Telephone Number: 931-372-3732
Email: *thill@tntech.edu*

OFFICE HOURS

By Appointment

COURSE INFORMATION

PREREQUISITES

MATH 1730, MATH 1910 or MATH 1920

TEXTS AND REFERENCES

Required Text: ***MATLAB: A Practical Introduction to Programming and Problem Solving 4th Ed. by Stormy Attaway***

Course Website: ***http://www.github.com/thillRobot/matlab_workshop/blob/gset/README.md***

COURSE DESCRIPTION

Problem Definition, Algorithm Development, Flowcharting, and Structured Programming and Problem Solving Using a High Level Computer Programming Language

Materials

You are required to have a USB-drive to use for this class. It does not need to be large capacity. I recommend that you store everything from this class on this drive. It is also a good idea to back up your work using a separate system. Primarily you will program on TTU computers, but you are free to use your personal machine if possible. Also, you must have a calculator for tests and quizzes as well as the required textbook.

Course Objectives/Student Learning Outcomes

In this course you will develop structured thinking and problem solving skills and learn to apply these skills to engineering problems using the MATLAB programming language. After this course you should be able to:

- Decompose a problem into discrete steps and develop an algorithm for its solution
- Represent the algorithm as a flowchart and understand the program flow
- Use sequential programming to implement basic algorithms and perform engineering computations
- Use loops and control structures for more complex algorithms
- Write user defined function to preform specified tasks
- Read and write to and from data files
- Work with vectors (1-D array) and matrices (2-D array)
- Work with basic vector operations and linear algebra operations
- Debug programs written by oneself or others

Grading and Evaluation Procedures

Field	Weight
Mini-Projects	20%
Laboratory	30%
Quizzes	10%
Midterm Exam	20%
Final Exam	20%

Letter Grade	Grade Range
A	90-100
B	80-89
C	70-79
D	60-69
F	59 and below

Course Policies

Student Academic Misconduct Policy

Maintaining high standards of academic integrity in every class at Tennessee Tech is critical to the reputation of Tennessee Tech, its students, alumni, and the employers of Tennessee Tech graduates. The Student Academic Misconduct Policy describes the definitions of academic misconduct and policies and procedures for addressing Academic Misconduct at Tennessee Tech. For details, view the Tennessee Tech's Policy 217 – Student Academic Misconduct at Policy Central. Students are encouraged to obtain limited help and/or ideas from one another. However, sharing files or code in any way is strictly forbidden. Tthere is a zero tolerance policy for cheating on quizzes or exams. While completing the exams, students may only use the allowed materials detailed above. If a student is observed using a restricted device or material, or is found to have copied any part of the exam answers from another student, the student (or students) will be reported to the Student Affairs office for Academic Misconduct. Violation of this policy will result in an 'F' for the course.

Attendance Policy

You are expected to attend lecture and lab. You are responsible for all assignments and material covered and all issues discussed during all class meetings whether you are present or not. You are responsible for all assignments and material covered and all issues discussed during class meetings whether you are present or not. Makeups will not be given unless exceptional circumstances are present and you have official documentation. Assignment due dates are posted on ilearn but they are subject to change. Work may be turned in late for up to one week. Every day the work is late 5% will be deducted, but after one week late the work will not be accepted.

Class Participation

Please ask questions and participate in class discussions. Do not worry about asking stupid questions, you are not here to look cool. Also feel free to come to my office and ask questions during my posted office hours or any other time. If I am free I will be happy to help. Do not use your cellphone in class. Although tempting, this is rude and you will miss material. Please silence your phones. You are encouraged to bring your computer to lecture and lab but try not to get distracted. Please silence your and computers.

Online Gradebook

You will be able to see your assignment grades as soon as they are available on the course website, ilearn. Please check the gradebook periodically. If you believe your grade is incorrect or missing please send me an email describing the issue. If needed you grade will be changed. You must request no later than 2 weeks after the grade has been posted. After 2 weeks the grade will be considered final. This is particularly important towards the end of the semester as it can affect final grades.

Naming Convention

Follow the required naming convention for all submitted files and programs. You will use you Tennesee Tech user name in you file names. For group assignments both students' user names will appear in the file name. You will receive a detailed document describing the naming convention and any exceptions will be discussed. You grade will is entered into the grade book based on this convention so please follow or you will not receive credit. For this reason it is important to check the ilearn gradebook periodically. In the beginning of the semester I will be forgiving but after the second assignment you will receive a 10% penalty if you do not follow the convention.

Mini-Projects

There will be individual programming mini-projects assigned throughout the semester. A formal printed report may be required with some of these assignments. The specifications of these reports will be discussed and documented. Your mini-projects will count for 20% of your grade and are to be completed individually. No group work besides discussion is allowed on programming mini-projects.

Laboratory Assignments

Each lecture period will be followed by a laboratory session. You will be assigned one partner to complete laboratory assignments in groups of 2. You and your partner will submit only one program per group for each lab. Formal reports for are not required for labs, but you may be required to submit more than your code. Your laboratory assignments will count for 30% of your course grade. As the course progresses some lab assignments will require time out of lab for completion.

Quizzes

Quizzes will be given in class regularly. Some may not be announced. Your quizzes count for 10% of your course grade and will require 10 to 15 minutes to complete. As a general rule there will be a quiz every week except for exam weeks.

Exams

You will have a midterm exam and a final exam. Each exam counts 20% of your grade. The midterm exam will be scheduled at least one week in advance, and the final exam schedule is posted on this syllabus, however the final does not follow the standard university final exam schedule. You are allowed to use your textbook, a non-programmable calculator, and a one page handwritten note sheet on the exams.

Email Policy

The University sends official communications to all TTU email addresses. All students receive a @students.tntech.edu email address. This address will receive notices about schedules, grade results, billing information, emergency alerts, important deadlines, a daily email newsletter, and all other official university information. It is your responsibility to read and manage this email. Please add my email, thill@tntech.edu, to your approved recipients list to ensure you will receive any correspondence in regards to this course. Please note the instructor of this course is not responsible for missed email communication directed to your spam folder. Also, I will not be using the ilearn email system. I will ignore any emails sent to or from ilearn or to my personal email. Please contact me using my official Tennessee Tech email.

Disability Accommodation

Students with a disability requiring accommodations should contact the Office of Disability Services (ODS). An Accommodation Request (AR) should be completed as soon as possible, preferably by the end of the first week of the course. The ODS is located in the Roaden University Center, Room 112; phone 372-6119. For details, view the Tennessee Tech's Policy 340 – Services for Students with Disabilities at Policy Central.