

Engr 2304: Engineering Programming

Sec. 01 3841: Lecture on TTh 9:35 am – 10:55 am, Lab on Th 2:30 – 4:30 pm
Science Building, Room 131

Syllabus – Spring 2010

Instructor: Dr. April K. Andreas
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Department Website: <http://www.mclennan.edu/departments/engr/>
Course Website: <http://www.cleverfred.com/mcc/>

In case the school has to close due to inclement weather, please visit the school website for up to date official information at <http://www.mclennan.edu/>.

Catalog Description: Introduction to computer programming using a modern programming language. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes coverage of language syntax, and data and file structures.
Semester Hours: 3 (3 lec)

Learning Outcomes: Upon successful completion of this course, the student will be able to demonstrate the following learning outcomes:

1. Write and execute a simple program using the Matlab language.
2. Write and execute a Matlab program using a selection statement (if/else/switch).
3. Write and execute a Matlab program using a repetition statement (do/while/for).
4. Write and execute a Matlab program with a user defined function.
5. Write and execute a Matlab program using an array.
6. Write and execute a Matlab program that reads and writes from data files.
7. Write and execute a Matlab program that displays information to a user as a graph (plot).
8. Use numerical methods such as Taylor Series to solve a problem, then write a program to facilitate the solution.

Prerequisite: Credit for or concurrent enrollment in Math 2413 (Calculus I) or equivalent, or consent of division director.

Required Textbook: *Matlab for Engineers*, Holly Moore, 2nd edition, 2009

Recommended Software: Students should purchase a *Student Version* of Matlab, either from the bookstore or directly from The MathWorks at http://www.mathworks.com/academia/student_version/. Cost should be approximately \$99 when purchasing online. Students do not need to purchase any additional “toolboxes” for Matlab.

Additional requirements: Student must have a reliable computer and internet connection. Students must be able to demonstrate basic computer literacy skills such as keyboarding, sending and receiving email, and using a web browser.

Office Hours. Unless announced otherwise, my office hours will be MW 9:30 am – 10:30 am and TTh 11:30 am – 1:00 pm. You can also make an appointment to meet with me at another particular time, and are also welcome to drop by my office without an appointment.

Learning Lab. The Learning Lab in the Science Building, room 135, has five computers with Matlab installed for student use. Learning Lab hours will be posted on the door. Students in this class may contact Liz Mitchell at 299-8187 or lmitchell@mclennan.edu to make an appointment to get into the lab outside of regular hours. *Note: The MCC Computer Lab will not have Matlab available. Students who do not purchase their own copy of Matlab will need to go to the Science Building's Learning Lab to complete assignments.*

Math Lab. Any student enrolled in this class has free access to the Math Lab, located in HPE 218. Hours of operation are usually Monday – Thursday 8:00 am – 7:30 pm and Friday 8:00 am – 2:00 pm. Call (254) 299-8878 to confirm for particular days.

Attendance. Attendance is mandatory. No absences are “excused,” with the exception of religious holy days as defined by the MCC attendance policy. You must attend both lecture and lab. ***Per MCC policy, you will be automatically dropped after missing 25% of class meetings, or any combination of 11 classes and labs.*** If the student is dropped before the official drop date, the student will receive a grade of W. If the student is dropped after the official drop date, the student will receive a grade of F, unless there are *highly unusual circumstances*.

ADA Statement. “In accordance with the requirements of the Americans with Disabilities Act (ADA), and the regulations published by the United States Department of Justice 28 C.F.R. 35.107(a), MCC’s designated ADA co-coordinators, Mr. Gene Gooch - Vice President, Finance and Administration and Dr. Santos Martinez – Vice President, Student Services shall be responsible for coordinating the College’s efforts to comply with and carry out its responsibilities under ADA. Students with disabilities requiring physical, classroom, or testing accommodations should contact Mr. Marcus Sweatt, Disabilities Specialist, at 299-8122 or msweatt@mclennan.edu.”

Six Drop Rule. Students who enroll at MCC as entering freshman or first-time college students during the fall 2007 semester or any subsequent semester may not drop more than six courses. The six-course limit does not apply to students who were enrolled in college courses prior to the fall 2007 semester. Students who have completed a baccalaureate degree at any accredited public or private institution are not subject to the six-course limit. The six course limit includes courses taken at MCC or any other Texas public institution of higher education. If a seventh drop is attempted, the student and instructor will be informed that the student must remain in the course and the student will receive a grade of A, B, C, D, F or I. He/she will not be able to receive a W or withdrawal grade and will not be due a refund of tuition and fees. All courses dropped after the semester census date are included in the six-course limit unless (1) the student withdraws from all courses or (2) the drop is an approved drop exemption.

Academic Dishonesty. Any student that is found guilty of academic dishonesty such as cheating, plagiarism, or collusion, will receive the zero grade on every test or assignment involved. For repeated violations, a guilty student can be assigned a failing grade in this course and can be recommended for suspension from the McLennan Community College District.

Privacy. Because of Privacy Laws, I can only discuss your grade with you, in person and in private. I can only discuss grades by e-mail if you e-mail me with your university address.

Miscellaneous. Normally, please do not bring your children, friends, or guests to the class. (Please discuss this with me because I do not want you missing class if you cannot make child care arrangements.)

Grading Policy

Category	Percentage
Quizzes	15%
Homework	25%
Tests	35%
Final Exam	25%
Total	100%

A: 90 – 100% B: 80 – 89% C: 70 – 79% D: 60 – 69% F: 0 – 59%

Quizzes. *Quizzes are due every Monday by 11:55 pm.* They will test knowledge of syntax, programming outcomes, and other material covered in class. These will be short answer, true/false or multiple choice quizzes.

Homework: *Homework is due every Wednesday by 11:59:59 pm.* There will be homework assigned throughout the semester. They should be submitted via Blackboard or email along with any other supporting documentation required by the assignment. **DO NOT** wait until right before an assignment is due to begin it. **DO NOT** wait until 3 seconds before midnight to try to submit an assignment. Computer crashes, internet troubles, etc., are not valid excuses for failing to turn in an assignment on time.

In the case that Blackboard breaks down, equivalent homework assignments are listed on the course website listed at the top of the first page of the syllabus. Click the Current Classes link, and then click the Daily Assignments link to access those materials. **Even if Blackboard isn't working, you are still responsible to turn in all assignments on time!**

For all homework, you should submit a .m script file that includes comments and documents how you are solving the problems. You should also include a diary file that shows the output of your script. If I run your script and do not get your output, there will be trouble. Later, you will also need to submit any additional functions that you created while solving homework problems.

Tests: All tests will be taken in the classroom. During this time, cell phones must be put away and turned off (not on vibrate... off). You can substitute your final exam grade for your lowest test score, if that grade is higher than any of your test grades.

- Example 1: If your test grades are 95, 85, 80, and 66, and your final exam grade is 82, your test average will be $(95 + 85 + 80 + 82)/4 = 85.5$.
- Example 2: If your test grades are 95, 85, 80, and 66, and your final exam grade is 32, your test average will be $(95 + 85 + 80 + 66)/4 = 81.3$.
- Example 3: If you miss a test, your test average will average the three tests you did take and your final exam grade.

No tests may be retaken. All tests must be taken with closed books and without any notes or formulas. You must complete each test during the time given. If you are late for class, you forfeit that amount of time to work.

Comprehensive Final Exam: The comprehensive final will be taken in class. The final exam grade cannot be dropped or retaken. The exam must be taken with closed books and without any notes or formulas.

Tentative Lecture Schedule

Below is an initial sketch of when we will cover material and when tests will be scheduled. It is my intention to cover most of the content in your book. It is your responsibility to attend class so you will know of any changes to this schedule, including any changes in test dates.

Date	Material Covered
Tue, Jan 12	1.1 - 1.4, 2.1 - 2.2
Thu, Jan 14	2.3 - 2.3
Tue, Jan 19	3.1 - 3.4
Thu, Jan 21	3.5 - 3.6
Tue, Jan 26	3.7 - 3.9, 4.1
Thu, Jan 28	4.2 - 4.3
Tue, Feb 2	5.1
Thu, Feb 4	Test 1
Tue, Feb 9	5.2, 5.3
Thu, Feb 11	5.4 - 5.7
Tue, Feb 16	6.1
Thu, Feb 18	Test 2
Tue, Feb 23	6.1
Thu, Feb 25	6.2 - 6.5
Tue, Mar 2	7.1 - 7.2
Thu, Mar 4	7.3 - 7.5
Tue, Mar 16	8.1 - 8.4
Thu, Mar 18	8.4 - 8.5
Tue, Mar 23	9.1
Thu, Mar 25	Test 3
Tue, Mar 30	9.2 - 9.3
Thu, Apr 1	10.1 - 10.2
Tue, Apr 6	10.3 - 10.5
Thu, Apr 8	11.1 - 11.2
Tue, Apr 13	11.3
Thu, Apr 15	Test 4
Tue, Apr 20	12.1
Thu, Apr 22	12.2
Tue, Apr 27	13.1
Thu, Apr 29	Final Review

As a final note: As future engineers, you need to get used to the fact that not everything you're going to need is going to be covered in class. We'll cover the big stuff, but some of the details are going to be left to you. You will need to read the book as we go along. Expect to spend hours and hours on homework and other preparation for this class.

I'm going to assume that you know all the math that is a prerequisite for this course, including algebra, precalculus, and trigonometry. If you need a refresher on that material, it is your responsibility to get it, although I can certainly help you locate resources outside of class time.

I reserve the right to change any term on this syllabus at any time during the semester.