SAN JUAN COLLEGE

ENGR 135 MATLAB 1010 3.00 Credits
Syllabus

Instructor Information

Mr. Carl Bickford
bickfordc@sanjuancollege.edu
Phone: 505-566-3503
Office : Room 1640, Science, Math and Engineering Faculty Offices

Course Information

Meeting times and location: MW 03:30PM 04:45PM ITV

Catalog description: Engineering problem solving using MATLAB software as a computing language. No previous programming experience is required. Problems involved mathematical concepts from a Pre-Calculus level, including matrices and complex numbers. Programming concepts include: plotting, user-defined functions, controlled input and output, logical functions, repetition structures, matrix algebra, arrays, numerical techniques, and graphics manipulation.

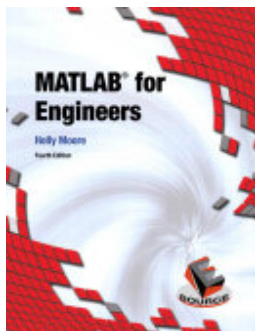**Prerequisites:** MATH-1240(MATH-170) or MATH-1250

Terms offered: Fall and Spring

Course Level Objectives

1. Perform mathematical calculations in MATLAB
2. Plot data in 2 & 3 dimensions, analyze data trends
3. Write programs and functions using MATLAB syntax
4. Solve simultaneous equations using matrix manipulation
5. Manipulate graphics
6. Create and edit a Graphical User Interface (GUI)

- This course covers:

1. Built-in functions
2. Manipulating matrices
3. Plotting (2 & 3D)
4. User-defined functions
5. Input and Output
6. Logical test and selections
7. Repetition structures
8. Matrix algebra
9. Arrays
10. Numerical techniques
11. Graphics manipulation
12. Graphical user interfaces (GUI's)

Required Texts and/or Materials

MATLAB for Engineers
9780134589640
Holly Moore
Pearson Higher Ed
5th Edition
No software access is required. Previous editions have similar content, but differ in some homework problems and features from newer versions of MATLAB

Required Technology and Software

- Canvas
- Chrome, Safari, or Firefox

- MATLAB student edition (purchased for personal use, or campus lab computers)
- Microsoft Excel
- Canvas
- Chrome, Safari or Firefox
- Warning: using the Apple operating system will work with MATLAB, but expect trouble dealing with Excel files. The instructor cannot help with Apple iOS issues.
- Scientific calculator

Technical Support

Technical support is available through the San Juan College Help Desk 24/7/365. The help desk can be reached at 505-566-3266 or by creating a ticket at San Juan College Help Desk.

For tickets and password reset: San Juan College Help Desk

For Canvas support information: Canvas Support

Accessibility/Privacy Policies for all Technology Tools Used

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Course Requirements

SOFTWARE:

The student edition of MATLAB is required. San Juan College has ~100 licenses installed on computers in labs 1733 & 1901. You can purchase a copy yourself for ~ $50 at either MATLAB's website or through Amazon.

TEXT MATERIAL:

Material from Chapters 1-11, and 13-15 are covered in class. Sections involving calculus or differential equations are skipped.

HOMEWORK:

Homework assignments will consist of Problems at the end of each Chapter. While the initial ones will involve mostly functions in the command window, later ones will require programming. All programs must be submitted as MATLAB files through Canvas. Two (2) homework grades are dropped after midterm.

QUIZZES:

Short quizzes are given in class once per week (Mondays) covering homework due the previous Wednesday. Quizzes will involve writing code and submitting the file. You have ½ hour to complete the quiz. If no homework is submitted before the quiz, there is a

30% penalty. If the quiz is handed in after the instructor leaves the room the maximum score is 70%. Two (2) quiz grades are dropped after midterm.

 PROJECT:

A final data analysis project will be assigned near the end of the semester. You will be given an extensive Excel file and will perform calculations, produce graphs, and export a data file with results. This assignment cannot be dropped.

CANVAS:

Web software (Canvas) is used to track and submit assignments, take quizzes, provide an avenue for course announcements, and store a variety of resources. Your course grade is kept and continuously updated here. Homework assignments are open for one week after the due date for late submissions. Points are taken off for late work, and no work will be accepted once the assignment closes.

COVID Safe Practices for Attending Class

Masks / cloth face coverings must be worn while on campus in accordance with the New Mexico public health order. If you feel that you cannot wear a mask due to health complications, please contact Disabilities Services: disabilityservices@sanjuancollege.edu or call (505) 566-3271. Hand sanitizer stations are at all building entrances, please "wash in, wash out"--clean your hands when you enter and before you leave. Classrooms and labs have been arranged to allow for social distancing; please respect your classmates and instructors by staying 6 feet away from everyone. You will be expected to disinfect your table or area prior to class and after class, cleaning products will be provided for this purpose. Check with your instructor for specific policies for their course. Please do not congregate in hallways or common areas, instead utilize our beautiful outside spaces and weather to visit with your friends and colleagues from a safe distance.

If you have been in contact with anyone who has tested positive for COVID-19, has symptoms, or is waiting on test results, contact your instructor and DO NOT come to class. If you have tested positive, have symptoms or are waiting on test results, contact your instructor and DO NOT come to class. Your health care provider or the assigned contact tracer will let you know when it is safe for you to be around others.

Student Support

Student Services and Support

The Student Support webpage provides information on counseling, tutoring, technical support, and many other support services available to San Juan College students.

[Student Support](#)

Academic Support

Academic Support webpage provides information on academic advising, the library, Testing Center, and the honors program.

[Academic Support](#)

Participation and Attendance Policy

Attendance is taken. Absence and lateness will have an effect on final grades to the extent that class work and quizzes are missed.

Canvas Participation and Expectations

All submissions are turned in through Canvas. Check in every week for announcements and assignments. All grades are available on Canvas and you should verify them often.

Instructor Response Time

Phone calls and emails will be returned within two (2) business days, and often sooner. Work will be graded and posted with a few days of the due date.

Course Time Commitment

Significant time will be required outside of class to complete homework assignments and the project. Plan on at least six hours a week, more if you are new to programming.

Grading

Category	Weight (%)
Quizzes	50
Homework	30
Project	20

Key Dates to Remember

August 24: First Day of Semester

September 5-6: Campus Closed – No Classes Held

September 7: Campus Closed – Labor Day – No Classes Held

October 1: Deadline to Apply for Fall Graduation

November 16: Registration for Spring 2021 Begins

November 23-28: No Classes Held

November 25-29: Campus Closed – Thanksgiving Break

December 15: Last Day of Semester

December 21-January 3: Campus Closed – Winter Break – No Classes Held

[Full Academic Calendar](#)

Course Schedule

This is a 16 week course and is not self-paced. You are expected to keep up with the assignment schedule in Canvas. The final project will be due on the last day of class.

College Policies

The following information also applies to your work in this class. If you have special needs for campus emergency situations, please inform me immediately.

1. **Academic Accommodations - American with Disabilities Act (ADA)**

   If you believe you need academic accommodations due to physical or learning disabilities, you are encouraged to inform them as soon as possible. The coordinator can work with you in verifying your disabilities and developing accommodation strategies. Please go to [Disability Services Office](#), click the button for "Request for Services" and complete all the steps.

   You can also contact the college's disability coordinator in the Advising/Counseling Center at 566-3271 or disabilityservices@sanjuancollege.edu. More information is

available on the website listed above.

2. **The Family Educational Rights and Privacy Act (FERPA)**

   Your personal information and grade are confidential. Aside from routine reporting to the college required for this course, I will not share such information with anyone unless I have your permission.

3. **Academic Honesty Rules**

   San Juan College expects all students to adhere to the [Academic Honesty Rules](#) as posted online. These are the official guidelines for all classes at San Juan College (July 2006).

4. **Student Conduct Statement**

   College is preparation for professional opportunities, and professional conduct is expected in courses, including online classes, as well as any written communications, and interactions with members of the college community. As part of our learning community, students are expected to interact and communicate in a mature, respectful, thoughtful, and supportive manner. Students who demonstrate disrespectful, hostile, belittling, bullying or other disruptive behavior will be subject to potential consequences and possible dismissal from the college. The college will take appropriate action when students demonstrate threatening behavior (to others or self). Students should refer to the Code of Conduct in the Student Handbook for additional information.

5. **Student Safety**

   Keeping students safe is a priority, and part of that is ensuring that we have the ability to communicate emergency messages – whether for school closures due to weather or for more or urgent situations. Rave is San Juan College's emergency messaging system. Through your SJC student email, you will automatically receive email messages, however, it is also vital that you receive text messages. In order to receive the messages, you must register in a simple process with [Rave](#). When registering, please make sure that your mobile status is "confirmed."

   The Department of Public Safety is available 24 hours per day. In an emergency, they can be accessed by calling 215-3091 or 566-3333.

   In the event of an emergency, a Rave message will be sent, and depending on the situation, you will be instructed to do one of the following:
   - Evacuate the building
   - Shelter in place (Campus doors are locked, and operations continue as normal. During this situation, no one other than law enforcement is allowed in or out of the campus.)
   - Lockdown (Campus doors are locked. All operations cease, and you should take cover in your immediate area. No one other than law enforcement is allowed in or out of the campus.)

6. **Drop for Non-Attendance and/or Non-Participation**

   Class Attendance and Participation Expectation:

   Face-to-Face -- Students are expected to attend and participate in class regularly. Any student missing more than 10% of consecutive class time, (For example, in a regular 15-week class that meets twice a week, this equates to the student missing 3 consecutive classes) without consultation with the instructor may be considered as having abandoned the course.

   On-line -- Students are expected to participate regularly and submit all course assignments, based on the course guide definition. A student who does not submit any assignments during a consecutive 10% of the course (1.5 weeks of a 15-week semester) without consulting the instructor, may be considered as having abandoned the course. Logging in does not meet the attendance standard.

   Competency-Based Education Classes -- Students are expected to have regular and substantive interactions with their instructor and to actively work on course content. A student who has not submitted coursework, nor had substantive interactions with the instructor over a consecutive 10% of the term, without the instructor's prior approval, will be considered to have abandoned the competency progression. Last date of attendance will be recorded as the last date that coursework was submitted or that the student met with the instructor. For on-line learners, logging in does not meet the attendance standard.

   Failure to Meet Class Participation Expectation:

   Students who fail to meet participation expectations will have their last date of attendance recorded. This date will be used to recalculate any financial aid received/veteran's benefits received, and the student may be required to repay the institution/government. If the student does not drop the course, an 'X' grade will be recorded. An 'X' grade impacts the grade point average the same as an 'F'.

7. **Grading Policies**

   Incomplete: Incomplete Grade Assignment ([Incomplete Grades Information](#))

   The grade of I (Incomplete) is given for passing work that could not be completed during the semester because of circumstances beyond the student's control. Ordinarily, the assignment of an I is given by the course instructor at the time final grades are due

In no case is an I grade to be used to avoid assignment of D or F grades for marginal or failing work or to require a student to enroll in the class the next semester because work was not completed on time. Circumstances warranting the issuance of an I grade must be beyond the student's control and must be documented on the appropriate form prior to approval.

I grades can be removed only during the subsequent 16 weeks from the end of term, or within the time limit set by the instructor. Removal of an I is accomplished by completing the work in a manner acceptable to the instructor. Re-enrollment in the course under the repeat option does not remove the prior grade of I. Students should not re-enroll for the course. An I not made up within 16 weeks or within the time limit set by the instructor will change to an F grade thereafter and cannot be changed by work completion.

8. **Grade Appeals**

   The policy for grade appeals is in the Academic Catalog.([Grade Appeal Policy](#))

Student Handbook

The Student Handbook provides information on Student support, student organizations, and San Juan College policies.

[Student Handbook](#)