

Administrative Details

This course covers a variety of computer tools used by mechanical engineers. Structured programming using MATLAB will be emphasized. Excel spreadsheets will also be covered. Use of computer tools, teamwork skills, and design analysis will be incorporated into several mini-projects throughout the course. (4 credits)

Web Page: <http://www.rose-hulman.edu/ME123/>

Course Objectives: After completing this course a student should be able to:

- Objective 1: Write structured programs in MATLAB to solve engineering problems.
 Objective 2: Create a variety of engineering plots and graphs using MATLAB.
 Objective 3: Implement simple numerical methods used for numerical integration.
 Objective 4: Troubleshoot with confidence.

Student Evaluation

A grade will be given to evaluate how well the student has assimilated the course material. The total grade for the quarter will be dependent upon homework, tests, and projects.

Grade Distribution:

Homework	10%
Quizzes	10%
Exam I	20%
Exam II	20%
Final Exam	25%
Mini-Projects	15%

Grade criteria

$x \geq 90\%$	A
$90\% > x \geq 80\%$	B
$80\% > x \geq 70\%$	C
$70\% > x \geq 60\%$	D
$60\% > x$	F

Exams

The exams will be given over two days: one day for a written portion and one day for a programming portion. The exam days are listed on the online course calendar.

Final Exam

The final course exam is given during the final exam slot. It is designed as a 90-minute exam but you will have the entire four hours to complete the exam if you wish.

Passing the Course

To pass the course, students must have a passing weighted exam average with passing defined as a D (60%) or higher.

Homework

Homework is work assigned for each lecture and are called *Exercises*. Assigned homework is due by 5 PM on the following lecture day. Place your homework in the appropriate slot in C-104. Ask for help with the homework if you are having difficulty. Each set of homework must start with a cover page, which should include an honor statement. An electronic copy of the cover page is available for download from the course website.

Late homework will not be accepted except for medical reasons (with notice as soon as practical) or if prior arrangements (more than 24-hour notice) have been made with your instructor.

Programs & Academic Integrity

All electronic submissions for this course must be completed and submitted on an institute laptop. The software used in this course (e.g. MATLAB, Excel, etc.) behaves differently on different operating systems; use of an institute laptop will prevent file formatting errors during submission.

You will often be assigned to write a program for your homework. Program assignments are expected to represent a student's individual effort. While it is certainly okay to give or get help with portions of your program (e.g., discuss concepts or strategies), using the efforts of another as your own will not be tolerated. Such behavior undermines one's learning. Additionally, the concept of team programming is not acceptable unless the problem was assigned in that manner. You will not gain the skills you are expected to learn by watching somebody else program. Daily individual practice with the course material and exercises is expected, as such practice is a very beneficial approach for reinforcing learning. Any indication of using large amounts of other student's work will result in loss of grade.

As stated in the Rose-Hulman academic policies, cheating and plagiarizing are strictly forbidden. You are expected to respect and observe the rule.

Academic Accommodations

Rose-Hulman is committed to working with students who have special needs or disabilities. If you have documented special needs, contact me as soon as possible so that we can work together to provide recommended academic accommodations while protecting your privacy. It is your responsibility to **request any approved academic accommodations at least three business days in advance of exams.**

Class attendance

Attendance at class meetings is required. Showing up more than 10 minutes late, leaving early, texting, or falling asleep during class does not count as class attendance. **Students who miss more than two classes without valid excuses will receive a final course grade reduced by up to one full grade level. A student whose total absences (excused and unexcused) exceed eight will fail this course.** Students with valid excused absences may make up the work within one week of the missed activity after a valid excuse is provided; this valid excuse must also be provided within one week of the missed event.

Valid excuses

Job and graduate/professional school interviews, attending scientific conferences and Institute-sponsored activities are valid excuses provided that every attempt to avoid missing major assignments and laboratory activities has been made, and the student notifies their instructor in writing (email is OK) and at least one week in advance of the event. Illness and exceptional circumstances are, of course, valid excuses if you notify me in writing as soon as practicable.