

# EGR 106

## Foundations of Engineering II

Lecture 1 – Course Introduction

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# Program Announcement: Concentration in Naval Science and Technology

Academic program (9 credits):

Seminar course, Navy-related research, Navy-related senior design

Seminar course (1 credit):

“EGR 201 - [Seminar in Naval Science and Technology](#)”

Wednesdays 5 PM, Fascitelli 025C

Open to public, All students are welcome to attend

For more details, see program web site:

<http://web.uri.edu/naval-science-technology>



# EGR 106 – Course Information

Course Brightspace Site:

THE UNIVERSITY OF RHODE ISLAND EGR106: Found Of Engineer. II\_L01\_L02\_L03...

Course Home Content Assignments Discussions Quizzes Classlist Grades Class Progress Course Tools Help More

EGR 106 Foundations of Engineering II - Spring 2022

Content Browser

- Bookmarks
- Recently Visited
- Syllabus
- Brightspace Information
- Weekly Announcements and Activities

Announcements

There are no announcements to display.

Note:

- Some Tuesday/Thursday instructors may setup separate Brightspace sites
- Weekly assignment grading will be done by Tuesday/Thursday instructors

# Syllabus

THE  
UNIVERSITY  
OF RHODE ISLAND  
COLLEGE OF  
ENGINEERING

*Spring 2022*

## EGR 106 - Foundations of Engineering II

**Course Description:** Engineering problem solving. (Lec. 1, Lab. 2) Prerequisites: MTH 141 or concurrent registration in MTH 141.

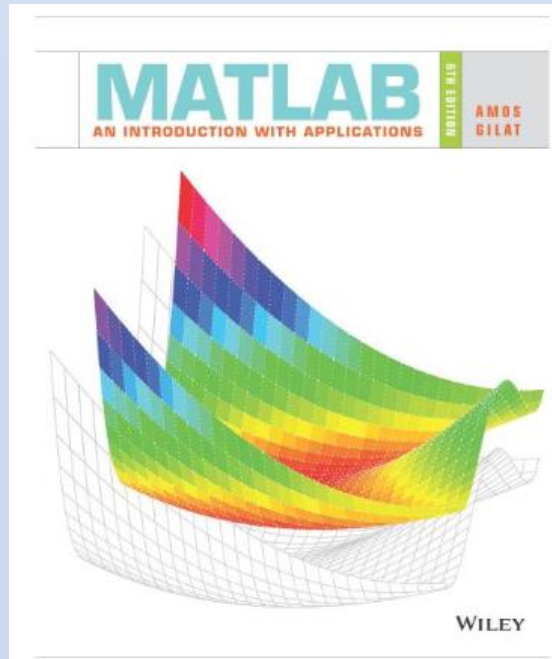
**Course Goals:** To develop engineering problem solving skills using the computer software tool MATLAB - a widely used engineering and scientific software package with excellent computational, programming and graphics features. Students will acquire skills to write basic MATLAB codes to solve problems of engineering interest. These skills will be applied to an engineering design project.

See Brightspace for full syllabus, weekly activities and course materials

# Course Objectives

To introduce engineering problem solving methods using the computer software tool MATLAB - a widely used engineering and scientific software package with excellent computational, programmable and graphics features. Students will acquire skills to write basic MATLAB codes to solve problems of engineering interest.

# Text



**Matlab - An Introduction with Applications**, 6th edition, A. Gilat, John Wiley & Sons, 2015 ([Online access](#) - under institution, select "Not Listed, click here" and enter URI login credentials.)

# Software - Matlab

Options for running Matlab:

- Engineering Computing Center (requires ECC account)
  - Matlab installed on all PC's in ECC (Kirk & Fascitelli)
  - Remote access to ECC computers ([guac.egr.uri.edu](http://guac.egr.uri.edu))
- Other Devices - [free access for URI students](#)
  - Create Mathworks account with URI credentials
  - Install on personal computer or run Matlab Online in browser ([matlab.mathworks.com](http://matlab.mathworks.com))

# Course Operation

- Monday evening lectures
  - Week 1: Online Zoom meeting at 4 PM (Week 1 only)
  - Remaining weeks: Live in-person lectures every week at 4 PM in Pastore Auditorium (attendance optional, open to everyone)
  - Online video lectures posted each week
- Online Quiz (starting week 2) must be taken by 8 AM on Tuesday
- Small class sessions (Tues. or Thurs.) - Attendance Required
- First Semester Exam – 2/28 (Monday) at 4, 5 or 6 PM
- Second Semester Exam – 3/29 (Tues.) or 3/31 (Thurs.)
- Project Presentations– Finals Week (locations and times – TBA)
- Grading – Quizzes-10%, HW - 25%, Semester Exams - 35%,  
Project - 20%, T/Th Section Attendance - 10%.



# Clarification: Lecture vs. Lab

## e-Campus:

Class	Section	Days & Times	Room	Instructor
2042	L01-LAB Regular	Mo 4:00PM - 4:50PM	Pastore Hall 124 Auditorium	David Taggart
Class	Section	Days & Times	Room	Instructor
2043	L02-LAB Regular	TBA Mo 5:00PM - 5:50PM	TBA Pastore Hall 124 Auditorium	David Taggart David Taggart
Class	Section	Days & Times	Room	Instructor
2044	L03-LAB Regular	TBA Mo 6:00PM - 6:50PM	TBA Pastore Hall 124 Auditorium	David Taggart David Taggart

▼ EGR 106 - Foundations Of Engineering II				
Class	Section	Days & Times	Room	Instructor
3208	0001-LEC Regular	Tu 9:30AM - 10:45AM	Kirk Applied Engr Lab 212	Sumanta Das
Class	Section	Days & Times	Room	Instructor
3390	0002-LEC Regular	Tu 8:00AM - 9:15AM	Kirk Applied Engr Lab 212	Angelo Lucia
Class	Section	Days & Times	Room	Instructor
3391	0003-LEC Regular	Tu 12:30PM - 1:45PM	Kirk Applied Engr Lab 212	Ramdas Kumaresan
Class	Section	Days & Times	Room	Instructor

## In practice (opposite):

The Monday lectures will provide theory and background needed in preparation for the weekly problems assigned on Tuesday/Thursday.

Tuesday-Thursday class meetings will provide time, setting and help for completion of weekly assignments.

# Monday Lectures

All Monday lecture materials will be posted online on Brightspace

Weekly materials include:

- Powerpoint slides

- Videos of narrated presentations and demonstrations

- Multiple choice quizzes - Deadline is 8 AM every Tuesdays  
(before 1<sup>st</sup> lab session)

- Quiz grade (10%) based on online quizzes

  - Lowest quiz grade will be dropped

  - Can be taken up to 10 times (highest score is recorded)

  - Allow time for technical problems

# Tuesday / Thursday Sessions

Time: Tuesdays and Thursdays

Location: Sections 12 & 14 – 203C Kirk, all others Kirk 212

Attendance: Required (10%)

Purpose: Weekly assignments - some due at end of class, others due the following week. (25%)

# Tuesday/Thursday Sections (cont)

## Tuesday/Thursday sections:

1. Tuesday 9:30-10:45, Kirk 212
2. Tuesday 8:00-9:15, Kirk 212
3. Tuesday 12:30-1:45, Kirk 212
4. Tuesday 2:00-3:15, Kirk 212
5. Tuesday 3:30-4:45, Kirk 212
6. Thursday 2:00-6:15, Kirk 212
7. Thursday 11:00- 12:15, Kirk 212
8. Thursday 9:30-10:45, Kirk 212
9. Thursday 11:00-12:15, Kirk 212
10. Thursday 12:30-1:45, Kirk 212
11. Tuesday 11:00-12:15, Kirk 212
12. Thursday 11:00-12:15, Kirk 203C
14. Tuesday 9:30-10:45, Kirk 203C

Sumanta Das, 211 Fascitelli, 874-5637, [sumanta\\_das@uri.edu](mailto:sumanta_das@uri.edu)  
Angelo Lucia, 224 Kirk, 874-2814, [alucia@uri.edu](mailto:alucia@uri.edu)  
Ramdas Kumaresan, 487 Fascitelli, 874-4798, [kumaresan2@uri.edu](mailto:kumaresan2@uri.edu)  
Ramdas Kumaresan, 487 Fascitelli, 874-4798, [kumaresan2@uri.edu](mailto:kumaresan2@uri.edu)  
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Dhaval Solanki, 207 Fascitelli, 212-1569, [dhaval\\_solanki@uri.edu](mailto:dhaval_solanki@uri.edu)  
Dhaval Solanki, 207 Fascitelli, 212-1569, [dhaval\\_solanki@uri.edu](mailto:dhaval_solanki@uri.edu)  
Zongqin Zhang, 210 Fascitelli, 874-2517, [zhang@uri.edu](mailto:zhang@uri.edu)

# Exams

## First Semester Exam (17.5%)

Date: Monday, February 28  
Time: Section L01 – 4 PM, Section L02 – 5 PM , Section L03 – 6 PM  
Location: TBD

## Second Semester Exam (17.5%)

Date: March 29 (Tues.) or March 31 (Thurs.)  
Time: During T/Th meeting time  
Location: Kirk 212 or 203C

# Design Project (20%)

Working in teams, write a Matlab code that creates a three dimensional object

Design considerations:

- functionality
- aesthetics
- use of color and texture

# Example – Truss Bridge



# Design Project (cont.)

Deliverables (due last week of classes):

- Matlab code

- Graphic files (.obj and animated .gif)

Project Presentation

- Dates & Time: Finals Week

- (based on lab section meeting time)

- Location: TBD



# Student comments about EGR 106

- This was an interesting course and I learned alot
- This was a very useful and productive class
- Definitely a fun course for learning software like this
- Was a fun class!
- This class was extremely useful when it came to doing my physics homework. Knowing how to use Matlab made calculations for it a whole lot easier.
- I loved having the lecture online and it proved to be a good tool in learning the material.
- I would have preferred a mandatory in class lecture ... I did not feel encouraged to master the material

# Student comments about the Design Project

- The design project was the best part of the course, I felt it was the best way to learn anything in the course
- Loved it! / I think the project is fun. / Very effective way to wrap up the course.
- I like the creativity and openness to the project.
- Helpful in exploring the capabilities of Matlab
- I believe it's a good way to make us use the skills learned in this class
- It was an interesting project. It gave the ability to work as a team which gave experience as many engineering jobs you will work as a team. Also it was fun to see the different ideas people came up with.
- Matlab not the best tool for the project, other CAD programs would have been better for this type of assignment

# Why MATLAB?

- Student comment: “I am still unclear of the situations in which Matlab would be useful as opposed to other programming options such as Mathematica, Python, Java, or C.”
- Many programming languages are commonly used: Python, Java, C++, Ruby, Javascript, Matlab, Mathematica, VBA, R, Perl and many more.
- Advantages of MATLAB:
  - Widely used in industry and research labs for technical computing
  - Provides user-friendly programming environment and help system
  - Extensive library of built-in functions
  - Powerful graphics capabilities for visualization and image processing
  - At URI, MATLAB is used in numerous upper level engineering courses
- Disadvantages of MATLAB:
  - Slower execution times
  - Commercial product (many programming languages are free to use)

# Prior to attending T/Th class this week

For ECC computer access, be sure to have your ECC login name and password (same as account used in EGR 105, for assistance – see Help desk in ECC (203 Kirk) or e-mail [eccmanager@egr.uri.edu](mailto:eccmanager@egr.uri.edu) with student ID number.