

MEC 102

Engineering Computing and Problem Solving

Spring 2024



Syllabus

1. Teaching Staff and Office Hours

Instructor: Cornelius Bradter
cornelius.bradter@sunykorea.ac.kr
Academic Building C 623

Office hours: Monday and Wednesday, 14:00 to 15:30
or by appointment

Lectures: Friday 12:30 to 14:20 o'clock (room B103)

TA: Roman Jano Rabe (romanjano.rabe@stonybrook.edu)

Office hours and locations may change. Please check Brightspace for most up-to-date information.

2. Course Description

The course teaches how to use MATLAB for problem solving and analysis in science and engineering. It covers the basic use and capabilities of MATLAB and its application to concrete problems in engineering.

Prerequisites: A grade of C or better in MEC 101 or CIV 101.
Credits: 2

3. Textbook

Chapman, Stephen J. (2019): "MATLAB Programming for Engineers", 6th Edition, Cengage Learning, ISBN: 978-0357030394.

4. Software

Matlab 2021b or a newer version.

5. Course Learning Objectives

- understand data structures in Matlab,
- do data visualization,
- write Matlab scripts and programs,
- use control structures within programs,
- modularize scripts and programs by using functions,
- object oriented programming,
- understand the concept of toolboxes, and
- to use Matlab to solve problems in scientific and engineering areas.

6. Schedule (subject to revision, especially succession):

1. Introduction to Matlab's parts and workspace
2. Fundamental operations and Matlab's concept of data storage
3. Matlab's plot functions
4. Number formats in computers
5. Control structures
6. Examples of useful internal functions
7. Creating and using functions
8. Advanced data structures
9. Data import and export
10. Introduction to Object Oriented Programming in Matlab's
11. Toolboxes

7. Grading

There will be regular homework and one final homework. Regular homework cover problems that are presented at a specific time during class. In the final homework, either a problem is dealt with that can only be solved by knowing the entire course content or a collection of question about the course content is provided.

There will be one Midterm exam and a final exam at the end of the course.

Regular homework	40%
Final homework	20%
Midterm Exam	20%
Final exam	20%

Grading Scale Guideline:

$90 \leq A < 100$	$70 \leq C+ < 74$
$86 \leq A- < 90$	$65 \leq C < 70$
$82 \leq B+ < 86$	$60 \leq C- < 65$
$78 \leq B < 82$	$55 \leq D+ < 60$
$74 \leq B- < 78$	$50 \leq D < 55$

8. Course policies

- Homework and exercises will be posted on the Brightspace. Original students' solutions will be held by the department. Students can view their graded work upon request.
- All homework have to be solved within Matlab and have to be provided as pdf-files. The pdf-files must be created by using Matlab's publish-function.
- The time and details about the exams will be announced in the class (and also posted on Brightspace) and may be subjected to change
- It is the responsibility of students to make sure that they can access the Blackboard and that they have a working email registered with it. The Blackboard should be checked frequently for new materials
- Exams will be closed book and note.

9. Attendance Policy of SUNY Korea

1. All students of SUNY Korea are required to attend every class.
2. Unexcused absences will affect seriously the student's final grade in the course.
3. If a student has over 20% unexcused absence, the student's final course grade will be an 'F'.
(Examples)
 1. If the class is a 150-minute class, and is held once a week, the 4th unexcused absence of a student will lead to an F grade of the course.
 2. If the class is a 75-minute class, and is held twice a week, the 7th unexcused absence of a student will lead to an F grade of the course.
 3. If the class is a 50-minute class, and is held three times a week, the 10th unexcused absence of a student will lead to an F grade of the course.
 4. In Intensive English Course (IEC), if a student misses the class more than 40 hours in a semester, the student will receive an F grade on the course.
4. Students should report the reason of absence to the instructor in advance, or immediately after the absence.
5. When a student excuses his/her absence, the student must provide documentation of the reason for the absence to the instructor.
6. The instructor of the course reserves the right to excuse absences.
7. The course instructor may excuse the absence if the submitted documentation fulfills the conditions below.
 - a. Extreme emergencies (e.g. death in the family)
 - b. Severe medical reasons with doctor's note (Not a slight illness)
 - c. Very important events (e.g. national conference, official school event)
8. At the end of semester, the course instructor should submit a copy of the attendance sheet to the Academic Affairs Office.

10. Academic Honesty

Any academic dishonesty on a written homework will result in a zero grade for the assignment for all parties involved.

All exam work must be entirely your own with no collaboration or outside materials/information. Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website.

11. Electronic Communication Statement

Email and especially email sent via Brightspace (<http://blackboard.stonybrook.edu>) is one of the ways the faculty officially communicates with you for this course. It is your responsibility to make sure that you read your email in your official University email account.

If you choose to forward your official University email to another off-campus account, faculty are not responsible for any undeliverable messages to your alternative personal accounts.

12. Disability Support Service (DSS) Statement

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact One-Stop Service Center, Academic Building A201, (82) 32-626-1117. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation are confidential. In addition, this statement on emergency evacuation is often included, but not required: Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and One-Stop Service Center.

13. Academic Integrity Statement

Each student must pursue their academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

14. Critical Incident Management Statement

The State University of New York, Korea expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.