

The University of Jordan
School of Engineering
Department of Mechatronics Engineering
1st Semester 2019/2020



Course:	Computer Application for Mechatronics 0908231 (1 Credit hours– Core course)
Instructor:	Eng. Nisreen Amayreh <i>Office:</i> Mechatronics Department, <i>Telephone:</i> 5355000 <i>Ext:</i> 23034 <i>Email:</i> n.alamayreh@ju.edu.jo <i>Office Hours:</i> (Mon and Wed:10:00-11:00), (Sun, Tue: 11:00-12:00)
Course Website:	http://elearning.ju.edu.jo
Catalog Data:	Introduction to MATLAB; script files (m); variables; strings; arrays and vectors; operators, expressions and statements; decisions (if statements); loops (for statements); logical operators; complex numbers; operations on matrices; plotting (two dimensional and three dimensional); functions; engineering applications: practical exercises will be given on MATLAB, with other softwares as necessary (e.g. Simulink, LabVIEW).
Prerequisites by Course:	Computer Skills -1931102
Prerequisites By Topic:	Basic knowledge of programming
Textbook:	Introduction to MATLAB For Engineers. PALM. McGraw-Hill Professional; 3 edition 2012, ISBN-13: 978-01259012051
References:	<ul style="list-style-type: none">• <i>MATLAB® An Introduction with Applications</i>, Amos Gilat, Publisher: JOHN WILEY; 4 edition 2011 ISBN-13: 978-0-470-76785-6• <i>LabVIEW for Everyone: Graphical Programming Made Easy and Fun</i>, Jeffrey Travis, Printice Hall, 2006, 3rd Edition. ISBN-13: 978-0131856721
Schedule & Duration:	16weeks, (3 hours each) including exams.
Minimum Student Material:	Text book, class handouts, and an access to personal computer with MATLAB software
Instructional Methods:	<ol style="list-style-type: none">1. Lecture/problem solving sessions.2. Case studies using MATLAB.3. Short pop-up quizzes
Minimum College Facilities:	Lab with whiteboard and projection display facilities, library, and computational facilities.
Course Objectives:	<ol style="list-style-type: none">1. Find solutions for systems of linear algebraic equations using MATLAB.2. Use Simulink to model, analyze and simulate dynamic systems using block diagrams.3. Write and read from Excel sheets using MATLAB built-in functions.4. Visualize data using MATLAB plot functions. Learn simple and advanced plotting techniques.
Contribution Professional Component	to The course motivates the student to acquire the knowledge, skills and attitudes necessary to start programing with different software packages.

Course Learning Outcomes and Relation to ABET Student Outcomes:

Upon successful completion of this course, a student should:

1. Demonstrate the basic principles of computer programming and their application to the solution of engineering problems.
2. An ability to communicate effectively with a range of audiences. [3]

Mapping to Student Outcomes

ABET SO	3: An ability to communicate effectively with a range of audiences
Percentage of Course total marks	5

Course Topics:

	Chapter(s) in Text	Hrs
Introduction		3
An Overview of MATLAB®	Chapter 1	3
Numeric, Cell, and Structure Arrays	Chapter 2	6
Functions and Files	Chapter 3	3
Programming with MATLAB	Chapter 4	6
Advance Plotting	Chapter 5	3
Model Building And Regression	Chapter 6	3
Simulink	Chapter 10	6
GUI		3

Ground Rules:

- **Attendance:**

Students are expected to attend EVERY CLASS SESSION and they are responsible for all material, announcements, schedule changes, etc., discussed in class. The university policy regarding the attendance will be strictly adhered to.

- **Make up Examinations**

There will be no make up exams for any exam that will be taken during the course. exceptions to this rule is restricted only to the following cases:-

1. death of only first order relatives (father, mother, sister, or brother).
2. hospital entry (in-patient) during thr time of the examination.

Any other cases will be given the zero mark in the corresponding exam.

Assessments:

Exams, Quizzes, Homeworks and Project.

Grading policy:

Project	15 %
Quizzes & assignments	15 %
Midterm Exam	30 %
Final Exam	40 %
Total	100%

Last Updated:

Sep, 2019