



Jordan University of Science and Technology
Faculty of Engineering
Biomedical Engineering Department

BME-230: Tools for Biomedical Engineers

Course Catalogue

1 Credit hour (3 h Lab). Basic software packages used in various stages of the Biomedical Engineering curriculum, Matlab, LabView, Statistical software, Electrical circuits modeling software.

Textbooks

- 1) Introduction to Matlab, D. Etter, second edition.
- 2) LabVIEW for everyone , Jeffrey Travis, second edition.

References

Books

- 1) LabVIEW for everyone , Jeffrey Travis, second edition.
- 2) Introduction to Matlab for Engineers, W. Palm.

Instructor

Instructor **Dr. Areen Al-Bashir**

Office Location	College of Engineering building, BME Department
Office Phone	720-1000 ext: 22629
Office Hours	Mon, Tue and Wed. 11:30-14:30 , Sun: by appointment
E-mail	akbashir@just.edu.jo
Engineer	

Prerequisites

Prerequisites by topic	Programming Language
Prerequisites by course	CS 114
Co-requisites by course	-
Prerequisite for	-

Tentative Lab Schedule

Week	Topics	Topic in Text
1	Introduction to SPSS	Handout
2-5	Introduction to Matlab	Handout
6-7	Freelab + Midterm exam	---
8	Introduction to Multisim	Handout
9-12	Introduction to LabVIEW	Handout
13-15	Freelab + Final exam	---

Evaluation

Assessment Tool	Expected Due Date	Weight
Quizzes	One week after homework problems are assigned	5%
Performance	During the Lab	5%
Class work	During the Lab	5%
Home work	At the beginning of the next lab session	15%
Midterm Exam	According to the department schedule	30 %
Final Exam	Final Exams week (Labs)	40 %

Objectives and Outcomes¹

Objectives	Outcomes
The objectives of this course are to develop the student's understanding of appropriate uses of computer systems and to develop the student's skill in using a computer as a tool to solve engineering problems. (A,B,E,F,I,K)	<ul style="list-style-type: none">• Use SPSS and Matlab to solve problems that require mathematical manipulations• Create engineering graphs using SPSS, LabVIEW, and Matlab• Write Matlab script files and LabVIEW ,SPSS, worksheets that include input/output, control structures, looping, arrays, and functions• Determine which software program would be best suited for solving a particular problem in various situations• Perform a simple analysis of numerical data including mean, mode, median, standard deviation, linear regression and correlation using SPSS and Matlab• Solve systems of linear equations using Matlab• Perform simple matrix operations using Matlab• Perform circuit analysis using Multisim software

Contribution of Course to Meeting the Professional Component

This Lab contributes to building the fundamental basic tools for solving and analyzing engineering problems

Relationship to Program Outcomes (%)

1	2	3	4	5	6	7	8	9
30	20		15		25	10		

Relationship to Biomedical Engineering Program Objectives

PEO1	PEO2	PEO3	PEO 4
√			√

Last Modified: February 11th, 2020

¹ Lower-case letters in brackets refer to the Program outcomes