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

BME230 Tools For Biomedical Engineers - JNQF Level: 7
First Semester 2023-2024

Course Catalog
1 Credit Hours. 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.

Text Book	
Title	LabVIEW for everyone
Author(s)	Jeffrey Travis
Edition	2nd Edition
Short Name	REF#1
Other Information	...

Course References

Short name	Book name	Author(s)	Edition	Other Information
REF#2	Introduction to MATLAB	D. Etter	2nd Edition	...

Instructor	
Name	**Prof. Luay Fraiwan**
Office Location	C5 L2
Office Hours	
Email	fraiwan@just.edu.jo

Instructor	
Name	**Dr. Areen Al-Bashir**
Office Location	C5 L-1

Office Hours	Sun : 13:00 - 13:30 Mon : 10:00 - 11:30 Mon : 13:00 - 13:30 Tue : 09:30 - 11:30 Wed : 10:00 - 11:30
Email	akbashir@just.edu.jo

Class Schedule & Room

Section 1:
  Lecture Time: Tue : 14:30 - 17:30
  Room: LAB
 	
Section 2:
  Lecture Time: Wed : 14:30 - 17:30
  Room: LAB
 	
Section 3:
  Lecture Time: Tue : 11:30 - 14:30
  Room: LAB

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
2001140	NE114 Programming For Engineers	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction to SPSS	
Weeks 2, 3, 4, 5	Introduction to MATLAB	
Weeks 6, 7	Free lab + Midterm exam	
Week 8	Introduction to Multisim	
Weeks 9, 10, 11, 12	Introduction to LabVIEW	
Weeks 13, 14, 15	Free lab + Final exam	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	**Course Outcome Weight (Out of 100%)**	**Assessment method**
Use SPSS and MATLAB to solve problems that require mathematical manipulations [1SO1] [1L7S1]	10%	
Create engineering graphs using SPSS, LabVIEW, and MATLAB [1SO1, 1SO2] [1L7S1]	10%	

Write MATLAB script files and LabVIEW ,SPSS, worksheets that include input/output, control structures, looping, arrays, and functions [1SO1, 1SO2, 1SO5] [1L7S2]	10%	
Determine which software program would be best suited for solving a particular problem in various situations [1SO1, 1SO5] [1L7C2]	20%	
Perform a simple analysis of numerical data including mean, mode, median, standard deviation, linear regression and correlation using SPSS and MATLAB [1SO1, 1SO2] [1L7S2]	20%	
Solve systems of linear equations using MATLAB [1SO1, 1SO3, 1SO4] [1L7S1]	10%	
Perform simple matrix operations using MATLAB [1SO1, 1SO5, 1SO6] [1L7S1]	10%	
Perform circuit analysis using Multisim software [1SO2, 1SO6] [1L7S2]	10%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
45	23.33	3.33	3.33	16.67	8.33	

Relationship to NQF Outcomes (Out of 100%)		
L7S1	L7S2	L7C2
40	40	20

Date Printed: 2023-12-14