



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

BME466 Biomedical Engineering Design

Second Semester 2022-2023

Course Catalog

3 Credit Hours. Detailed description of the engineering design definition, process, fundamental idea generation, decision, and comparison tools, It includes problem definition, concept generation, design requirements, design specifications, evaluation, design validation, regulations, liability, and safety, The implementation of engineering design principles in solving biomedical problems using the student's background in engineering and biomedicine with an emphasis on biomedical instrumentation circuit design to solve presented problems.

Text Book

Title	Engineering Design: A Project Based Introduction
Author(s)	Dym, C. L
Edition	3rd Edition
Short Name	Ref #1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #2	Building Scientific Apparatus:A Practical Guide to Design and Construction	Moore, J. H., Davis, C. C., and Coplan, M. A	3rd Edition	

Instructor

Name	Dr. Yazan Al Dweiri
Office Location	C5 L2
Office Hours	Sun : 11:30 - 13:00 Tue : 13:30 - 14:30 Wed : 14:00 - 15:30 Thu : 08:00 - 10:00
Email	ymaldweiri@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue : 09:30 - 10:30 Room: M2010

Prerequisites		
Line Number	Course Name	Prerequisite Type
102364	MED236A Physioanatomy	Prerequisite / Study
282011	BME201 Introduction To Biomedical Engineering	Prerequisite / Pass
283140	BME314 Medical Electronics II	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction to Biomedical Design	
Week 2	Fundamental Design Tools	
Week 3	Design management, Documentation, and Reporting	
Week 4	Product Definition, Documentation, and Development	
Week 5	Computer-Aided Design, Human Factors Issues	
Week 6	Industrial Design, Biomaterials and Materials Selection	
Week 7	Safety Engineering: Devices and Processes	
Week 8	Prototyping and Testing, Quality Control and Improvement, Reliability, and Liability	
Week 9	The Food and Drug Administration, Licensing, Patents, Copyright, and Trade	
Week 10	Premarket Testing and Validation	
Week 11	System Testing	
Week 12	Regulation Tracking	
Week 13	Manufacturing and Quality Control	
Week 14	Product Issues	
Week 15	Professional Issues	
Week 16	Miscellaneous Issues	

Mapping of Course Outcomes to Program Outcomes	Course Outcome Weight (Out of 100%)	Assessment method

Appreciate the role of Biomedical Engineering in society [1SLO1, 1SLO2, 1SLO4, 1SLO5]	10%	
Acquaint basic design concepts essential to the understanding of biomedical engineering and to provide exposure to a wide range of biomedical engineering technology [1SLO1, 1SLO2, 1SLO5, 1SLO7]	15%	
Encourage lifelong learning, foster teamwork and enhance students? communication skills [1SLO1, 1SLO2, 1SLO5]	10%	
To provide students with practical experience of biomedical instrumentation design by coaching them through the design process of a particular device for real problem [1SLO1, 1SLO2, 1SLO5, 1SLO6]	10%	
To teach students design management [1SLO1, 1SLO2, 1SLO4, 1SLO6]	10%	
To teach students the legal and regulatory aspects of the design process [1SLO4]	10%	
Analyze problems involving design process [1SLO1, 1SLO2, 1SLO6]	10%	
To cultivate an innovative attitude [1SLO1, 1SLO6]	15%	
To teach students safety aspects of design [1SLO1, 1SLO2, 1SLO6]	10%	

Relationship to Program Student Outcomes (Out of 100%)																			
A	B	C	D	E	F	G	H	I	J	K	L	M	SLO1	SLO2	SLO3	SLO4	SLO5	SLO6	SLO7
													28.75	21.25		15	12.08	19.17	3.75

Date Printed: 2023-12-14