Jordan University of Science and Technology

Faculty of Engineering

Mechanical Engineering Department

ME780 Automated Manufacturing Systems

First Semester 2021-2022

Course Catalog
3 Credit Hours. Graduate Course, description and demonstration of automated machine tools and machining cells, machining center configuration, operation, machine tool controller, machining code generation, in-process sensing and control, cell controllers, and system simulation.

Text Book	
Title	Automation, production systems, and computer-integrated Manufacturing
Author(s)	Mikell P. Groover
Edition	4th Edition
Short Name	TextBook
Other Information	

Instructor	
Name	**Dr. Mohammad Omari**
Office Location	M5L3
Office Hours	Sun : 14:30 - 16:00 Mon : 10:00 - 13:00 Wed : 10:00 - 12:30 Thu : 10:00 - 13:00
Email	engomari@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun : 11:30 - 14:30 Room: LAB

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2	Introduction (manufacturing processes and Materials)	
Weeks 3, 4	Manufacturing operations	From **TextBook**
Week 5	Manufacturing metrics and Economics	From **TextBook**
Weeks 6, 7	Computer Numerical control and CAD/CAM	From **TextBook**
Week 8	Automation_General terms	From **TextBook**
Weeks 9, 10	Hardware components for automation	From **TextBook**
Weeks 11, 12	Industrial Robotics	From **TextBook**
Weeks 13, 14	Discrete Control using PLC and PC	From **TextBook**
Weeks 15, 16	Students Presentations	

Mapping of Course Outcomes to Program Outcomes	**Course Outcome Weight (Out of 100%)**	**Assessment method**
Demonstrate a thorough understanding of automated manufacturing processes, including their principles, technologies, and applications. [1SLO2]	20%	
Calculate Manufacturing metrics and Economics to enhance the efficiency, quality, and cost-effectiveness of automated manufacturing processes. [1SLO1]	20%	
Develop proficiency in programming and controlling automated manufacturing systems using Computer Numerical control and CAD/CAM [1SLO7]	40%	
Design and implement solutions for the seamless integration of sensors and actuators in automated manufacturing systems. [1SLO6]	20%	

Relationship to Program Student Outcomes (Out of 100%)																	
A	B	C	D	E	F	G	H	I	J	K	SLO1	SLO2	SLO3	SLO4	SLO5	SLO6	SLO7
											20	20				20	40

Policy	
Graduate course	All graduate policies are applied in this course.

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