Jordan University of Science and Technology

Faculty of Engineering

Mechanical Engineering Department

ME471 Instrumentation - JNQF Level: 7
Second Semester 2024-2025

Course Catalog
3 Credit Hours. Analysis of experimental data.Statistics; mean and variance, Basic electronic measurement and sensing devices, Displacement, area, force , torque , pressure, strain, fluid flow, temperature, and thermal and transport properties measurements.
Teaching Method: Blended

Text Book	
Title	Instrumentation for Engineering Measurements
Author(s)	James W. Dally
Edition	2nd Edition
Short Name	TextBook
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Theory of measurements	Theory and design for mechanical measurements	R.S Figliola and D.E Beasley	5th Edition	

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue : 10:00 - 11:00 Room: M5125

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
243032	EE303 Principles Of Electrical Engineering (Non Ee-Students)	Prerequisite / Study
253431	ME343 Fluid Mechanics	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Applications of electronic instrumentation systems	From **TextBook**
Weeks 2, 3	Analysis of circuits, Analog Recording instruments	From **Theory of measurements**
Weeks 4, 5	Sensors for transducers	From **Theory of measurements**
Weeks 6, 7	Signal Conditioning circuits	From **TextBook**, From **Theory of measurements**
Weeks 10, 11	Resistance-Type strain gages	From **Theory of measurements**
Week 12	Force, torque and pressure measurements	From **TextBook**, From **Theory of measurements**
Week 13	Displacement, Velocity, and acceleration measurements	From **Theory of measurements**
Week 14	Temperature measurements	From **Theory of measurements**
Week 15	Fluid flow measurements	From **TextBook**
Weeks 8, 9	Statistical methods for Data Analysis	From **TextBook**

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Analyze experimental data [1SO6] [1L7S3]	30%	
Evaluate different instrumentation components and systems [1SO2] [1L7S3]	30%	
Investigate different modern measurements systems. [1SO6] [15L7S2]	40%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
	30				70	

Relationship to NQF Outcomes (Out of 100%)	
L7S2	L7S3
40	60

Evaluation	
Assessment Tool	**Weight**
First Exam	25%
Second Exam	25%
Final Exam	40%
Project and Quizzes	10%

Policy	
University Policy	- Attendance is mandatory. Any student who misses 20% of the class will be barred from class. - Late student will be considered absent. - No cell phones are allowed during class. - All cell phones should be turned OFF during exams.
Evaluation Policy	Assignments, Quizzes 10% Experiment 0% 1st Exam 25% project 25% Final Exam 40%

Date Printed: 2024-12-23