



MUTAH UNIVERSITY
Faculty of Engineering
Department of Mechanical Engineering



Course Syllabus
Study Plan 2017

Course Code	Course Name	Credits	Contact Hours
0402203	Dynamics	3	3T

INSTRUCTOR/COORDINATOR

Name	Dr Ibrahim Alkhazali
Email/Office	ibrahimk@mutah.edu.jo
Office Hours	S,M,T 12:00 – 13:00
Classroom/Time	S,T,T 10:00-11:00, M,W 09:30-11:00

TEXTBOOK

Title	Engineering Mechanics Dynamics
Author/Year/Edition	R. C. Hibbeler / 2003/ 10th edition

Other Supplemental Materials

Title	Engineering Mechanics: Dynamics
Author/Year/Edition	James L. Meriam, L. G. Kraige, J. N. Bolton /2015 /8th edition

SPECIFIC COURSE INFORMATION

A. Brief Description of the Content of the Course (Catalog Description)

- Kinematics of Particles
- Kinetics of Particles
 - Forces and Acceleration for Particles
 - Work and Energy for Particles
 - Impulse and Momentum for Particles
- Kinematics of Planar Motion of Rigid bodies
- Kinetics of Planar Motion of Rigid bodies
 - Forces and Acceleration for rigid bodies
 - Work and Energy for rigid bodies
 - Impulse and Momentum for rigid bodies

<ul style="list-style-type: none"> • Introduction to Vibrations 														
B. Pre-requisites (P) or Co-requisites (C)														
Statics (0403200) (P)														
C. Course Type (Required or Elective)														
Required														
SPECIFIC GOALS														
A. Course Learning Objectives (CLOs)														
By the end of this course, the student should be able to:														
CLO1: Understand and analyze the dynamics of particles in three-dimensional motions [1].														
CLO2: Analyze the dynamics of rigid bodies, and systems of rigid bodies in planar motion [1].														
CLO3: Learn the principles of energy and momentum of rigid bodies [1].														
CLO4: Learn the basics of vibration [1].														
B. Student Learning Outcomes (SOs) Addressed by the Course														
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1	2	3	4	5	6	7								
✓														

BRIEF LIST OF TOPICS TO BE COVERED		
List of Topics	No. of Weeks	Contact Hours
Kinematics of Particles	2	6
Kinematics of Planar motion of Rigid bodies	3	9
Relative motion of rigid bodies and Coriolis acceleration	1	3
Forces and Acceleration for Particles	1	3
Forces and Acceleration for Rigid bodies	2	6
Work and Energy for Particles	1	3
Work and Energy for Rigid bodies	1	3
Impulse and Momentum for Particles	1	3
Impulse and Momentum for Rigid bodies	1	3
Introduction to Vibrations	1	3
Final Exam	-	-
Total	14	42

EVALUATION		
Assessment Tool	Due Date	Weight (%)
Mid Exam	According to the university calendar	30
Course Work (Homeworks, Quizzes, Projects, ...etc.)	One week after being assigned	20
Final Exam	According to the university calendar	50

ABET's Students Learning Outcomes (Criterion # 3)		
Relationship to program outcomes		
ABET 1-7	Engineering Student Outcomes	
1	√	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2		an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3		an ability to communicate effectively with a range of audiences.
4		an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5		an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6		an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7		an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.