Philadelphia University
Faculty of -Engineering-----------------
Department of –Mechanical engineering-------------

Course Syllabus	

Course Title: Applied Mechanics	Course code: 620214
Course Level: 2	Course prerequisite (s) and/or co requisite (s): Calculus, Physics
Lecture Time: 10:10-11:00	Credit hours: 3

Academic Staff Specifics				
Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr. S. Ammourah	Assistant professor	Mechanical Eng. Dept E61308	11-12 11:15-12:15	sammourah@philadelphia.edu.jo

Course description:
In this course students will learn how to build a foundation of analytical capability for the solution of engineering problems that describe force and motion, which is in other words to familiarize with Newton's laws in motion.

Course objectives:
- Analyze and solve problems containing equilibrium of rigid bodies.
- Solve problems concerning force acceleration, energy, and momentum.

Course components

- **Books (title , author (s), publisher, year of publication)**

1. Engineering mechanics: Statics, Hibbeler and Maxwell, 10th edition
2. Engineering mechanics: Dynamics, Hibbeler and Maxwell, 10th edition

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Teaching methods:
Lectures, discussion groups, problem solving, debates.

Learning outcomes:
• Knowledge and understanding
The student should be able to deal with equilibrium problems for both rigid bodies and particles. Also, the student should be familiar with both kinetics and kinematics of particles and rigid bodies.

• Cognitive skills (thinking and analysis).
The students should link the concepts that they are learning with the real applications by giving live examples where the subject concepts are applied.

• Communication skills (personal and academic).

Assessment instruments

- Short reports and/ or presentations, and/ or Short research projects
- Quizzes.
- Home works
- Final examination: 50 marks

Documentation and academic honesty

• Documentation style (with illustrative examples)
the students will be given the key solution after each exam to compare with their answers as well as the marking scheme. If any has an objection then the supervisor should consider it based on the key solution and the marking scheme. If the student has extra marks then he it should be added to him

• Avoiding plagiarism.
   The university has strict rules about plagiarism and it will be considered where it is necessary.

Course/module academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
(1)	Statics of a particle	**Quiz at the end of the chapter**
(2)	Rigid bodies: Equivalent System of forces	**Quiz out at the end of the chapter.**
(3)	Rigid bodies: Equivalent System of forces	
(4)	Equilibrium of Rigid	**Quiz at the end of the**

	bodies	**chapter.**
(5)	Equilibrium of Rigid bodies	
(6) **First examination**	Equilibrium of Rigid bodies	
(7)	Distributed forces: Moment of inertia	**Quiz at the end of the chapter.**
(8)	Distributed forces: Moment of inertia	
(9)	Kinematics of rigid bodies	**Quiz at the end of the chapter and small related project**
(10)	Kinematics of rigid bodies	
(11) **Second examination**	Plane Motion of Rigid bodies: Force and Acceleration	**Quiz at the end of the chapter**
(12)	Plane Motion of Rigid bodies: Force and Acceleration	
(13)	Plane Motion of Rigid bodies: Force and Acceleration	
(14)	Plane Motion of Rigid bodies: Energy and Momentum	**Quiz at the end of the chapter**
(15) **Specimen examination** **(Optional)**	Plane Motion of Rigid bodies: Energy and Momentum	
(16) **Final Examination**	**Revision**	

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references

Books
1. Vector Mechanics for engineers: Statics and Dynamics, P. Beer and E. Johnston, McGraw Hill.
2. Engineering Mechanics, Statics. J.L. Meriam and L.G. Kraige, Willy.
3. Engineering Mechanics, Dynamics. J.L. Meriam and L.G. Kraige, Willy.