Al-Hussein Bin Talal University		**Faculty of Engineering**

Department of Mechanical Engineering.

Course Syllabus

Course title: Theory of Machinery	**Course No. /Code:** 0507333
Course pre-requisite: : 0507212	**Course teaching language:** English
Course level: Third year	**Credit hours:** 3 hours

Course Description:

Mechanisms and applications, mobility and linkages. Cams, gears and gear trains. Velocity and acceleration analysis in mechanisms. Inertia forces. Principles of balance in rotating & reciprocating masses.

Course objectives:

1.	To study the mechanisms of the various parts or bodies from which the machine is assembled and the various types of constrained motions.
2.	To explain methods for Determining the Velocity and acceleration of a Point on a Link.
3.	To determine the balancing of masses of rotating and reciprocating machine elements.
4.	To understand the principles of gyroscope and governors.
5.	To determine the forces and power calculations for brakes and dynamometer .
6.	To determine the static and dynamic forces for mechanical systems.
7.	To understand the principles of vibrations.
8.	To design basic gear trains and cam systems.

Learning outcomes (understanding, knowledge and practical skills):

Upon completing this course, the student is expected to be able to:

1.	Define the significance of degrees of freedom of a kinematic chain.
2.	Apply vector mechanics as a tool for solving kinematic problems.
3.	Determine the degrees-of-freedom (mobility) of a mechanism.
4.	Use graphical and analytic methods to study the motion of a planar mechanism.
5.	Design basic gear trains.
6.	Design basic cam systems.

Textbook & references:

Book title	Author (s)	Publisher	Edition
Theory of Machines	Khurmi, R. et al.	Eurasia publishing house	14th
DESIGN OF MACHINERY	R. L. Norton	McGraw-Hill	2nd

Assessment Methods:

Assessment no.	Assessment Method	Week Due	Allocated Mark
1	First exam	6th week	20
2	Second exam	12th week	20
3	Assignment	-	10
4	Final exam	17th week	50