

Course Specifications

University: Benha University

Faculty: High Institute of Technology

Course specifications

Program(s) on which the course is given

Basic and General course for all programs

Major or minor element of programs

Major

Department offering the program

Mechanical Eng. Tech., Civil Engineering Tech., and Electrical Eng. Tech.

Department offering the course

Mechanical Engineering Technology

Academic year / Level

First year (Preparatory year)

Date of specification approval

1990 G.

A- Basic Information

Title: Mechanics of machines

Code: M 251

Credit Hours: 3

Lecture: 2

Tutorial: 2

Practical: -

Total:4

B- Professional Information

1 - Overall aims of course

- Recognize mechanisms as a part of machine
- Analyze and follow planar mechanisms motions
- Identify kinematics of mechanisms

2- Intended learning outcomes of course (ILOs)

- Differentiate between structures and mechanisms
- Identify the mechanism controlling inputs
- Analyze displacement, velocity and acceleration of a point on the mechanism

- Analyze static and dynamic forces in mechanisms

a. Knowledge and understanding:

- a.1 Kinds of structural assemblies
- a.2 Calculate the degree of freedom of a given mechanism
- a.3 Know different kinds of specific mechanisms

b. Intellectual skills

- b.1 Visualize and follow mechanism positions during a course of motion
- b.2 Deduce and trace position of a point on a mechanism
- b.3 Define velocities and accelerations of a given point on a mechanism during its course of motion

c- Professional and practical skills

- c.1 Deal with a given mechanism

d- General and transferable skills

- d.1 Compute kinematics of a point in a mechanism
- d.2 Map a given mechanism into its kinematic chain to analyze its kinematics

3- Contents

Topic	No. of Hours	Lecture	Tutorial/Practical
Center of masses & Inertia	8	4	4
Structures & Mechanisms	4	2	2
Four-bar mechanisms	4	2	2
Special mechanisms	4	2	2
Velocity in mechanisms	12	4	4
Acceleration in mechanisms	12	4	4
Rotating Sliders analysis	8	4	4
Static forces in mechanisms	4	2	2

4– Teaching and learning methods

- 4.1-Direct instruction
- 4.2-Tutoring
- 4.4-Home assignments

5- Student assessment methods

- 5.1 Quizzes to assess understanding and professional skills
- 5.2 Homework grading to assess understanding and professional skills
- 5.3 MidTerm to assess intellectual and transferable skills
- 5.4 Final Exam to assess intellectual and transferable skills

Assessment schedule

- Assessment 1** Quizzes : Three or four times
- Assessment 2** HW : Every topic
- Assessment 3** Mid Term : Sixth or Seventh week
- Assessment 4** Final Exam : End of the term

Weighting of assessments

Mid-term examination	20 %
Final-term examination	60 %
Oral examination	0 %
Practical examination	0 %
Semester work	20 %
Other types of assessment	0 %
Total	100 %

Any formative only assessments

6- List of references

- Course notes
- Theory of Machines and Mechanisms, By: Shigley Joseph Edward,
Published by: McGraw-Hill,1995.

6.2- Essential books (text books)

- Lecture Notes

6.3- Recommended books

- Same books

6.4- Periodicals, Web sites, ... etc

7- Facilities required for teaching and learning

Possible lab demonstration

Possible E-Learning

Course coordinator: Prof. Dr. Ahmed El-Assal

Head of Department:

Date:30 / 6/2009