

FACULTY OF **ENGINEERING**

DEGREE COURSE: **INDUSTRIAL ENGINEERING BS**

SUBJECT: MECHANICS OF MACHINES

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OBJECTIVES

The course is aimed at:

- 1) Presenting the basic principles of machine mechanics (kinematics and dynamics of mechanical systems in planar motion and the study of principal mechanisms used in machine design)
- 2) Giving students minimal tools necessary to study mechanisms and machines
- 3) Providing students with the basic information underlying machines' operations.

CONTENTS

Machines and mechanisms, types and definitions – Kinematics – Friction forces – Statics – Dynamics – Dynamics of linear systems and vibrations – Mechanisms for power transmission – Mechanism for motion and function generation

LEARNING OUTCOMES

At the end of the course, students will be able to:

- study and analyze mechanical systems
- study and analyze the functional design of machines and mechanisms.

ASSESSMENT

Written exam: multiple choice and open questions

RECOMMENDED TEXTBOOKS

- R.L. Norton, *Design of Machinery: An Introduction to the Synthesis and Analysis of Mechanisms and Machines*, Fifth Edition, McGraw-Hill, 2011.
 - J. Uicker, G. Pennock, J. Shigley, *Theory of Machines and Mechanisms*, Fourth Edition, Oxford University Press, 2010.
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