

FACULTY OF **ENGINEERING**

DEGREE COURSE: **INDUSTRIAL ENGINEERING BS**

SUBJECT: FLUID MACHINERY AND ENERGY CONVERSION SYSTEMS

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OBJECTIVES

The course is aimed at:

- 1 providing basic skills needed to approach the study of fluid machinery and energy conversion systems
- 2 explaining the operating principles and the characteristics of some of the most widespread types of fluid machinery
- 3 explaining the operating principles and the characteristics of some of the most widespread types of energy conversion systems

CONTENTS

1. Thermodynamics and one dimensional fluid dynamics of machinery
2. Similarity theory
3. Centrifugal pumps
4. Hydraulic turbines
5. Reciprocating compressors
6. The combustion
7. Steam generators
8. Steam power plants
9. Gas turbine power plants
10. Combined cycle power plants
11. The cogeneration

LEARNING OUTCOMES

At the end of the course, students will:

- have acquired the basic skills to deal with the study of fluid machinery and energy conversion systems;
- have learned the operating principles and the characteristics of some of the most widespread types of fluid machinery;
- have learned the operating principles and the characteristics of some of the most widespread types of energy conversion systems.

ASSESSMENT

Written exam: multiple choice and open questions

RECOMMENDED TEXTBOOKS

Educational material provided by the teacher

