

FACULTY OF **ENGINEERING**

DEGREE COURSE: **INDUSTRIAL ENGINEERING**

MASTER DEGREE: **INDUSTRIAL ENGINEERING / DESIGN**

**SUBJECT:** MANUFACTURING STUDIES AND PROCESS PLANNING

**LECTURER:** ARCHIMEDE FORCELLESE

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## **OBJECTIVES**

The aim of the course is to provide students with the knowledge about process planning of manufacturing operations.

## **CONTENTS**

- Manufacture and its role in industry.
- Manufacturing cycle of products, activities and quantities in manufacturing, manufacturing technical functions.
- Integrated design of product, process and production system.
- Process plan of a product: definitions of working steps and elementary operations
- Critical analysis of the project design and evaluation of the initial data
- Choice of materials and technological processes, selection of machines, tools and working parameters.
- Computer aided process planning: variant, generative and hybrid approaches to CAPP.
- Work study and manufacturing costs.
- Examples of process plans: machining, forging, stamping and casting.

## **LEARNING OUTCOMES**

Students will be able to deal with the analysis of manufacturing processes, with emphasis to the process plan performed through the computer-aided methodologies.

## **ASSESSMENT**

Written exam: multiple choice and open questions

## **RECOMMENDED TEXTBOOKS**

M. P. Groover, "Automation, Production Systems and Computer-Integrated Manufacturing", Prentice Hall, 2001.

M.P. Groover, "Fundamentals of Modern Manufacturing", Prentice Hall, 2010.