

# Bachelor's Degree in Mechanical Engineering

**Duration:** 4 years

**ECTS credits:** 240

**Places:** 60

**Timetable 1st year:** afternoons and some mornings

**Languages:** Catalan, Spanish and English

**Cut-off grade:** 5.0

**As a graduate with a Bachelor's Degree in Mechanical Engineering you will be able to design, manage and maintain industrial supply systems, air conditioning and fluid transport systems, oil-hydraulic and pneumatic systems, thermal machines and motors and heat exchange systems.**

**You will acquire the skills needed to plan and design machine elements and structures based on calculation methods, materials, and the conditions related to their manufacture. To do so, you will learn to use CAD, CAE and CAM tools, and analytical and experimental techniques.**

**You will be an expert in the design, planning and interpretation of trials of machinery and mechanical assemblies. You will acquire the skills to apply the principles and methods related to quality management, and you will develop the skills needed to analyse and assess the social and environmental impact of technical solutions, as well as to optimize and rationalize production processes.**

## Why study the Bachelor's Degree in Mechanical Engineering at the URV?

You will be qualified to work in a profession for which there is a growing demand and that has greatly expanded in recent years. This degree meets the industrial needs of the environment and the country. You will participate in a unique learning method that will enhance your skills and abilities and which will have a strong focus on laboratory and project activities.

You will become a capable, versatile and problem-solving engineer, values that are essential in a professional career.

You will have the chance to undertake external internships in the most important

companies that operate in the field of mechanical manufacturing, maintenance and the design of industrial installations of machines and structures, automation, etc.

You will study at a leading school, known for its excellence and accredited by EUR-ACE®, and whose research has an impact in the world of mechanical engineering.

You can specialize in automation, maintenance, equipment design or construction.

## **Career opportunities**

You will be qualified for a professional career in companies in the mechanical, food, automotive, chemical, electrical, electronic or industrial robotics sectors. You will be able to work in both the private and public sectors and as a freelancer.

You will be qualified to work in the following areas:

- Planning and management of projects related to fluid transport systems, industrial refrigeration and cooling, ventilation and heating.
- Design and management of industrial structures and installation projects.
- Project, design, construction, testing and use of all kinds of mechanical systems.
- Design and control of the processes related to the manufacture of machines and mechanical actuators.
- Computer aided design and manufacturing.
- Project, design and use of new materials.

## **Recommended profile**

It is recommended that you have a good level in the subjects of Physics, Mathematics, Computer Science and Chemistry, Computer-Assisted Design and Graphic Expression. You must also have an interest in technology and be a creative person.

## Assignatures

### Distribution of credits across the degree course

Basic training: 60 ECTS credits

Compulsory training: 141 ECTS credits

Optional subjects: 27 ECTS credits

External internships (optional): 12 ECTS credits

Final thesis: 12 ECTS credits

### 1st year

ASSIGNATURA	ECTS
Business Administration and Organization of Production	6
Computer-Assisted Design and Graphic Expression I	6
Fundamentals of Engineering Physics I	6
Fundamentals of Engineering Chemistry	6
Fundamentals of Engineering Mathematics I	6
Computer-Assisted Design and Graphic Expression II	6
Fundamentals of Engineering Physics II	6
Fundamentals of Engineering Mathematics II	6
Numerical Methods and Algorithmic Programming	6
Integrated Project I	6

### 2nd year

ASSIGNATURA	ECTS
Materials Science and Technology	6
Elasticity and Strength of Materials I	6
Thermal Engineering I	6
Mechanics and Theory of Mechanisms I	6
Statistical Methods for Engineering	6
Materials Elasticity and Resistance II	6
Thermal Engineering II	6
Laboratory of Materials Elasticity and Resistance	3
Machinery and Mechanisms Laboratory	3
Mechanics and Mechanisms Theory II	6
Integrated Project II	6

### 3rd year

ASSIGNATURA	ECTS
Industrial Heating and Cooling	3
Fluid Mechanics Engineering	6
Electrical Technology Fundamentals	6
Thermal Machinery Laboratory	3
Mechanical Technology Laboratory	3
Mechanical Technology	3
Theory and Design of Structures	6
Operations Management	3

Machine Design	6
Fundamentals of Electronic and Automatic Technology	6
Hydraulics	6
Hydraulics Laboratory	3
Integrated Project III	6

#### 4th year

ASSIGNATURA	ECTS
Industrial Construction	3
Dynamics of Mechanical Systems	6
Machinery Testing Laboratory	3
Technical Office	6
Optional subjects	12
Technical English	3
Bachelor's Thesis	12
Optional subjects	15