Democratic and Popular Republic of Algeria Ministry of Higher Education and Scientific Research

Ferhat Abbas University - Sétif

Institute: Optics and Precision Mechanics

Applied Mechanics Degree

Training Objective

The Bachelor's degree in Applied Mechanics aims to provide students with a solid scientific grounding in the field of applied mechanics in general, and particularly as it relates to precision mechanics and optics (optomechanics). It prepares students to enter cutting-edge industrial sectors where precision and quality are essential.

The areas of expertise aim at:

- Mastery of the fundamental principles of mechanics, optomechanics and metrology.
- Acquisition of skills in computer-aided design (CAD) and computer-aided manufacturing (CAM) using specific software (Solidworks, Camworks, etc.). Mastery of machining,
- assembly and adjustment techniques for mechanical parts.
- Ability to read and interpret technical plans and produce parts that meet specifications.

- Become familiar with conventional manufacturing techniques (turning, milling, grinding, casting, etc.) and precision machining techniques (electrical discharge machining, plasma machining, ultrasonic machining, laser machining, etc.).
- 3D printing skills Knowledge of materials
- and their properties. Proficiency in the use
- of conventional and computer numerically controlled (CNC) machine tools.

-Proficiency in the use of precision measuring instruments and ability to control the quality of finished products.
- Know how to use computer software such as free and open source software.

Targeted Areas of Activity

At the end of this training, the skills acquired allow graduates to:

• Access to training in Master's in Mechanics or Precision Mechanics.

• Integration into the world of work of all areas of mechanics and precision mechanics.

General Organization of the training

The Applied Mechanics degree includes six semesters:

- S1, S2, S3, and S4 are common semesters for the ST course. At the end of these four semesters, an orientation will be made according to the student's wish list.
- S5 and S6 are specialty semesters.

Study Program Overview

The Applied Mechanics Bachelor's degree program provides solid technical training, both theoretical and experimental. The study program includes a range of fundamental and specialized subjects:

- Mathematics (algebra, analysis)
- Physics (mechanics, electricity)
- Chemistry
- Expression techniques and technical English
- Computer programming and simulation software
- Industrial design (CAD computer-aided design)
- Strength of materials
- Fluid mechanics
- Rational mechanics
- Mechanical Design and CAD
- Precision Mechanisms
- Conventional machining and shaping processes
- Precision machining (unconventional)
- Methods office
- Programming of numerically controlled machine tools and Computer Aided Manufacturing (CAM)
- Materials and their behavior Dimensional
- metrology and precision measuring instruments
- Design of Optomechanical Systems
- Entrepreneurship and Business Management.

Language of instruction:

The language in which the training is provided.
French and English

Head of specialty:

Dr: Mr. DEMOUCHE

Contact:*mdemouche14@gmail.com*

Career opportunities

Graduates of the Bachelor's degree in Applied Mechanics can access a variety of careers in different industrial sectors:

- Operator-setter on conventional and numerically controlled (CNC) machine tools
- Quality controller in precision mechanics
- Mechanical and precision mechanics design draftsman
- Production manager in precision mechanics.

Other sectors:

- **Design office**:Design of mechanical products and systems. **Methods office**:Establishment
- of machining ranges and phase contract **Industrial maintenance**:Maintenance and repair
- of industrial equipment and machinery. **Teaching and research**:Vocational education,
- research laboratory technician.