



UNIVERSITÉ
FRANÇAISE
D'ÉGYPTÉ



PROGRAM OF MECHANICAL AND MECHATRONICS ENGINEERING

Overview

The program of Mechanical and Mechatronics Engineering is a 4-year one, taught in English. Students earn an Egyptian bachelor's degree, with the option to pursue a French master's degree after one additional year of study through our partnership with University of Haute Alsace.

The bachelor's degree is recognized by both Egyptian and French Ministries of Higher Education and the Egyptian Engineering Syndicate. This program provides students with essential skills for the design, installation, operation, maintenance, and inspection of mechanical, mechatronics, energy, and manufacturing systems. Graduates will also be proficient in IT, AI, digital control systems, computational solutions, modern experimental techniques, and data analysis for practical problem-solving.



WHY STUDY MECHANICAL AND MECHATRONICS ENGINEERING?

- Earn a dual degree: an Egyptian bachelor's in 4 years and a French master's with 1 additional year of study.
- Study Mechatronics, Energy, and Manufacturing within a single bachelor's program.
- Engage in semester exchanges and summer internships at partner French universities.
- Two summer internships are required.
- The French Master's in Mechanics and Mechatronics of Vehicles can be completed in either France or Egypt.
- Qualify for PhD programs worldwide upon completing the French master's degree.

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| Program duration | 4 years |
| European Credits (ECTS) | 240 |
| French Partner Universities | University of Haute Alsace and CY Cergy Paris University |
| Faculty within UFE | Engineering and Architecture |

POSSIBLE CAREER PATHS:

- Mechanical engineer
- Mechatronics engineer
- Automotive engineer
- Aerospace engineer
- Robotics engineer
- Industrial engineer
- Energy system engineer
- Automation engineer
- Manufacturing engineer
- Control and instrumentation engineer
- Materials engineer

PROGRAM CONTENTS:

SEMESTER 1

- Mathematics 1
- Physical Mechanics
- Waves and Electromagnetism
- Introduction to Programming
- Eco design
- French Language
- English Language

SEMESTER 2

- Mathematics 2
- Chemistry
- Geometrical Optics
- Logic Design
- Information Retrieval Techniques for Engineers
- Professional Project (Summer Internship)
- Languages Fr & En

SEMESTER 3

- Technical Drawing
- Introduction to Applied Mathematics
- Project
- Elective 1
- Languages Fr & En
- Mechanical Manufacturing 1
- Stress Analysis

SEMESTER 4

- Statistics and Probabilities
- Structure and Physical Properties of Materials
- Thermodynamics 1
- Project
- Elective 2
- Principles of Mechanical & Mechatronics Engineering
- Dynamics of Systems and Solids

SEMESTER 5

- Electrical Power Engineering
- Sensors & Measurements
- Fluid Mechanics
- Heat Transfer
- Mechanics of Machines
- Materials Selection
- Languages Fr & En

SEMESTER 6

- Control 1
- Thermodynamics 2
- Design 1
- Mechanical Manufacturing 2
- Production Planning & Maintenance
- Languages Fr & En
- Summer Internship

SEMESTER 7

- Introduction to Mechatronics
- Internal Combustion Engines
- Design 2
- Graduation Project 1
- Elective 1
- Elective 2

SEMESTER 8

- Control 2
- Thermal Power Plants
- Operation Research and Management
- Graduation Project 2
- Elective 3
- Legislation