

# **BACHELOR'S DEGREE IN PROCESS ENGINEERING. GENERAL PROGRAM DESCRIPTION**

The Bachelor's Degree in Process Engineering at University of Oran 1 Ahmed Ben Bella (Algeria) falls under the domain of Science and Technology. This program aims to train students in the design, analysis, optimization, and operation of industrial processes for transforming materials and energy on a large scale.

The program combines strong foundations in fundamental sciences (mathematics, physics, chemistry) with applied knowledge in industrial processes, including heat and mass transfer, chemical reactors, and instrumentation.

## **Program Objectives and Skills Developed:**

### **Objectives:**

Provide a solid multidisciplinary foundation to prepare students for specialized Master's degrees or immediate employment in industrial sectors.

Develop technical skills to manage industrial process operations.

### **Skills Acquired:**

Perform material and energy balances.

Design, size, and control industrial equipment.

Analyze and measure variables in production and processing chains.

Integrate into diverse industrial fields such as chemical, pharmaceutical, environmental, petrochemical, and food industries.

## **Admission Requirements and Procedures:**

### **Entry into L1 (Year 1):**

High school diploma (Baccalaureate) in Science, particularly in Experimental Sciences, Mathematics, or Technical streams.

### **Entry into L3 (Year 3):**

Validation of 120 credits from semesters S1 to S4.

Or, at least 90 credits, provided:

100% of credits from core and methodological units in S1 and S2 are validated.

At least 2/3 of credits from fundamental and methodological courses in S3 and S4 are completed.

**Key Components of the Program:**

Duration: 3 years (6 semesters)

Credits: 180 ECTS

Structure:

Semesters 1–3: Common foundational courses.

Semesters 4–6: Specialization in Process Engineering.

**Core Subjects (Examples):**

Mathematics 1, 2, 3

Physics 1, 2

Thermodynamics / Chemical Thermodynamics

Physical Chemistry / Chemistry of Solutions / Organic Chemistry

Fluid Mechanics / Chemical Kinetics

Transfer Phenomena

Heat Transfer

Mass Transfer

Momentum Transfer

**Specialized Subjects (Examples – Years 2 & 3):**

Unit Operations

Homogeneous Reactors

Surface Phenomena and Heterogeneous Catalysis

Electrochemistry

Instrumentation and Sensors

Process Simulation Tools

Chemical Process Analysis Techniques

Pharmaceutical and Agro-Food Processes

Cryogenic Processes / Corrosion

Professional Project and Business Management

Final Year Project (PFE)

**Career Opportunities:**

Graduates are prepared for roles such as:

Process Technicians / Project Engineers

Employment in chemical, petrochemical, pharmaceutical, food processing, water treatment, and environmental sectors.

Work in research labs, consulting firms, and public institutions.

Eligibility to pursue Master's degrees in specialized fields (e.g., Environmental Engineering, Pharmaceutical Processes, etc.).

**Language in which the training is provided:**

The Bachelor's Degree in Process Engineering is predominantly taught in French; however, in recent years, certain subjects or parts of them have been offered in English.