

Faculty of
**Natural Sciences and
Mathematics**

Chemical Engineering

RPC-SO-21-No.436-2020

A photograph of a laboratory setting. A hand wearing a blue nitrile glove holds a 500 ml Erlenmeyer flask containing a pink liquid. The flask is placed on a white magnetic stirrer. In the background, a white laboratory faucet is visible. The overall scene is brightly lit, suggesting a clean and professional environment.

espol[®]

Bachelor of Science in Chemical Engineering



Applicant Profile

Students interested in:

- ▶ Analytical, critical, and deductive thinking
- ▶ Mathematics, physics, and chemistry
- ▶ Social well-being and sustainability
- ▶ Chemistry and its industrial applications



Employability

Upon graduation, students may pursue careers in the following sectors:

Research, Development, and Innovation

- ▶ Research and Development Manager
- ▶ Project Manager
- ▶ Laboratory Coordinator

Quality, Environmental, and Safety Management

- ▶ Environmental Department Director
- ▶ Project Coordinator
- ▶ Consultant
- ▶ Internal and External Environmental Auditor

Industrial Processes

- ▶ Operations Manager
- ▶ Plant Manager
- ▶ Industrial Safety Manager
- ▶ Process Engineer

Education

- ▶ Director
- ▶ Professor
- ▶ Researcher



Professional Skills

After four years of study, students will be able to evaluate, improve, and design chemical processes related to the transformation of matter, energy, and natural resources into products, goods, and services that benefit society through the integration of engineering principles with knowledge of mathematics, physics, chemistry, and the applied sciences. The competencies acquired enable students to develop these processes while considering efficiency and effectiveness in terms of product quality, costs, and environmental impact. In addition to analytical skills, students will gain experience in the use of laboratory instruments and equipment.



In fact...

Undergraduates of the Bachelor of Science in Chemical Engineering at ESPOL receive a strong foundation in chemical sciences, thermodynamics, unit operations, and industrial plant design, preparing them for professional practice and advanced studies.



LEARN MORE



Curriculum

N 100 - I	SINGLE VARIABLE CALCULUS	PHYSICS: MECHANICS	ARTS, SPORTS AND LANGUAGES ELECTIVE COURSES	PROBLEM SOLVING	GENERAL CHEMISTRY	ENGLISH I
N 100 - II	VECTOR CALCULUS	PROGRAMMING FUNDAMENTALS	PHYSICS: ELECTRONICS AND OPTICS	GENERAL BIOLOGY	INORGANIC CHEMISTRY	ENGLISH II
N 200 - I	DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA	STATISTICS	PHYSICAL CHEMISTRY	COMMUNICATION	ORGANIC CHEMISTRY I	ENGLISH III
N 200 - II	MATHEMATICS APPLIED TO ENGINEERING	HUMANITIES ELECTIVE COURSES	MASS AND ENERGY BALANCE	THERMODYNAMICS I	ORGANIC CHEMISTRY II	ENGLISH IV
N 300 - I	ENTREPRENEURSHIP AND INNOVATION	ANALYTICAL AND INSTRUMENTAL CHEMISTRY	MOMENTUM TRANSPORTATION PHENOMENA	THERMODYNAMICS II	QUALITY, ENVIRONMENT AND SAFETY MANAGEMENT IN THE INDUSTRY	ENGLISH V
N 300 - II		MASS TRANSPORT PHENOMENA	HEAT TRANSPORT PHENOMENA	KINETICS AND REACTORS DESIGN	UNIT OPERATIONS I	COMMUNITY SERVICE INTERNSHIPS
N 400 - I		SUSTAINABILITY SCIENCE	PROCESS DYNAMICS AND CONTROL	UNIT OPERATIONS II	PLANT DESIGN	SELECTED ELECTIVE COURSE
N 400 - II				WATER TREATMENT	CHEMICAL ENGINEERING CAPSTONE COURSE	SELECTED ELECTIVE COURSE
						PRE-PROFESSIONAL BUSINESS INTERNSHIPS



Program Accreditation



Did you know?

Chemical Engineering serves as a bridge between pure science and industrial production. This discipline integrates mathematics and chemistry to design, simulate, and optimize complex processes, transforming raw materials into impactful solutions that contribute to society's well-being.

www.fcnm.espol.edu.ec

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International Relations

Through its External Relations Office, ESPOL promotes and develops partnerships with international cooperation organizations, academic institutions, and research centers. These partnerships create mobility opportunities for the entire ESPOL community and contribute to the excellence that distinguishes the institution.

More than 226 international agreements allow students to participate in experiences abroad, including semester or year-long exchange programs, pre-professional internships, research placements, and participation in conferences, competitions, and other academic activities.

163
universities
around the world

