


Faculty of
Geosciences Engineering

A photograph of two young professionals, a man and a woman, wearing white hard hats and orange safety vests. They are looking at a large set of blueprints spread out in front of them. The man on the left is wearing glasses and has a beard. The woman on the right is smiling. They are outdoors, with trees and a building in the background. The image has a green overlay on the left side.

Civil Engineering Program

RPC-SO-24-No.526-2020



Bachelor of Science in Civil Engineering



Applicant Profile

In the Civil Engineering program, we seek proactive, creative, and analytical students with a critical mindset, basic knowledge of experimental sciences, and an interest in physics, mathematics, and construction. Candidates should also be motivated to design, plan, manage, and execute civil works projects.



Professional Skills

- ▶ Design and conduct laboratory tests, as well as analyze and interpret the results.
- ▶ Design systems, components, or processes to meet needs under ethical, political, and economic, social, and environmental sustainability constraints.
- ▶ Identify and solve problems arising in the various areas of Civil Engineering through the application of knowledge in mathematics, physics, and other sciences.
- ▶ Perform quality control of construction processes undertaken by private companies and public institutions.



Employability

Civil Engineering graduates from ESPOL will be able to contribute to the development of the country's construction sector by working in the following environments:

- ▶ Private or public sector (government or decentralized agencies)
- ▶ Universities and research institutes
- ▶ As independent consultants and advisors
- ▶ As inspectors and constructors

These environments are complemented by the following fields of work:

- ▶ Construction and management of civil works
- ▶ Structural Engineering
- ▶ Transportation and Highways
- ▶ Geotechnical Engineering
- ▶ Sanitary and Environmental Engineering
- ▶ Hydraulics

Civil Engineering students are in constant contact with representatives from the construction sector through seminars, conferences, and technical visits that allow them to learn about new construction processes and technologies. The private sector endorses our graduation projects and research projects every year. Our students also participate in extracurricular activities such as competitions, conferences, and student chapters, both at the national and international levels.

Curriculum Structure

LEVEL 100 - I

PROBLEM SOLVING

SINGLE VARIABLE
CALCULUS

PHYSICS:
MECHANICS

GENERAL CHEMISTRY

ARTS, SPORTS AND
LANGUAGES ELECTIVE
COURSES

ENGLISH I

LEVEL 100 - II

PROGRAMMING
FUNDAMENTALS

VECTOR CALCULUS

DIFFERENTIAL
EQUATIONS AND
LINEAR ALGEBRA

PHYSICS:
THERMODYNAMICS
AND ELECTRONICS

HUMANITIES
ELECTIVE COURSES

ENGLISH II

LEVEL 200 - I

STATISTICS

MATHEMATICS
APPLIED TO
ENGINEERING

STATICS

CONCRETE AND
BUILDING
MATERIALS

ENGLISH III

LEVEL 200 - II

COMMUNICATION

GEOGRAPHIC
INFORMATION
SYSTEMS

FLUID MECHANICS

STRENGTH OF
MATERIALS

TECHNICAL DRAWING

ENGLISH IV

LEVEL 300 - I

ENTREPRENEURSHIP
AND INNOVATION

HYDROLOGY

STRUCTURAL
ANALYSIS

SURVEYING

ENGLISH V

LEVEL 300 - II

SUSTAINABILITY
SCIENCE

HYDRAULICS

SOIL AND ROCKS
MECHANICS

REINFORCED
CONCRETE DESIGN

GEOMETRIC DESIGN
OF ROADS

LEVEL 400 - I

WATER SUPPLY AND
COLLECTION
SYSTEMS

FOUNDATION
ENGINEERING

STRUCTURAL DESIGN

PAVEMENT DESIGN

COMMUNITY
SERVICE
INTERNSHIPS

LEVEL 400 - II

CIVIL ENGINEERING
PROJECT
MANAGEMENT

DRINKING WATER
AND WATER
TREATMENT

DESIGN OF STEEL
STRUCTURES

BRIDGE DESIGN

PRESTRESSED
CONCRETE

SELECTED
ELECTIVE COURSE

LEVEL 500 - I

CONSTRUCTION
ENGINEERING

BUILDING SYSTEMS

CAPSTONE DESIGN IN
CIVIL ENGINEERING

SELECTED
ELECTIVE COURSE

PRE PROFESSIONAL
BUSINESS
INTERNSHIPS



By the way...

- ▶ Pre-professional internships are carried out in public or private institutions that have cooperation agreements with ESPOL.
- ▶ International accreditations allow graduates to receive recognition of their degrees abroad, which facilitates obtaining professional licenses as well as admission into master's and doctoral programs.



International Relations

ESPOL, through its Office of International Relations, promotes and develops partnerships with cooperation organizations and academic and research institutions worldwide. These partnerships create mobility opportunities for the entire polytechnic community and contribute to the excellence that characterizes us.

More than 165 agreements enable our students to undertake international experiences, including semester- or year-long exchanges, pre-professional internships, research internships, and participation in conferences, competitions, and other academic activities.

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universities
around the world



Accredited Program



Did you know?

By being part of this program, you will be able to apply your knowledge and skills in the design, construction, and supervision of Civil Works, such as:

- ▶ Bridges
- ▶ Roadways
- ▶ Drinking Water Systems
- ▶ Sewer Systems
- ▶ Ports
- ▶ Warehouses
- ▶ Buildings

You will also learn economic and sustainability criteria that will make you a competitive professional and environmentally friendly.

www.fict.espol.edu.ec

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