

Faculty of
**Electrical and Computer
Engineering**

Telecommunications Engineering Program

RPC-SO-20-No.422-2020

espol[®]

Bachelor of Science in Telecommunications Engineering



Applicant Profile

The applicant to the Telecommunications Engineering Program must have a strong interest in technology, possess basic knowledge of Physics, Chemistry, and Mathematics, and remain open to constant innovation within a digitally connected world.



Professional skills

After four years of study, you will be capable of:

- ▶ Designing and implementing optimized telecommunications networks.
- ▶ Managing implementation and expansion projects for communications efficiently.
- ▶ Designing analog and digital electronic systems built on programmable platforms.
- ▶ Taking part in scientific research projects focused on the development of telecommunications network systems.

Our students and faculty are prepared to excel in diverse environments, demonstrating complete mastery of their abilities. Their professional competence is shown through their capacity to analyze, design, manage, and integrate communication and information technologies to meet society's needs, including essential aspects of design, applied electronics, radiocommunications, IP networks, and telecommunications service management.



Employability

A Polytechnic Telecommunications Engineer may work as:

- ▶ Engineering Manager in telecommunications service providers and industries that use electronic systems.
- ▶ Design and Implementation Engineer for structured cabling, data and Internet networks, outside plant, and telecommunications infrastructure.
- ▶ Technical Support in Operation and Maintenance services of a communications network.
- ▶ Design Manager, Consultant, and Advisor in ICT Technologies Implementation.
- ▶ Telecommunications Researcher responsible for planning and executing scientific research projects for technological development.

Curriculum Structure

LEVEL 100 - I

GENERAL
CHEMISTRY

SINGLE VARIABLE
CALCULUS

PHYSICS:
MECHANICS

PROBLEM SOLVING

ARTS, SPORTS AND
LANGUAGES ELECTIVE
COURSES

ENGLISH I

LEVEL 100 - II

LINEAR ALGEBRA

PROGRAMMING
FUNDAMENTALS

VECTOR CALCULUS

PHYSICS:
ELECTRICITY AND
MAGNETISM

HUMANITIES ELECTIVE
COURSES

ENGLISH II

LEVEL 200 - I

DIFFERENTIALS
EQUATIONS

SIGNALS AND
SYSTEMS

STATISTICS

COMMUNICATION

INTRODUCTION TO
TELECOMMUNICATIONS

ENGLISH III

LEVEL 200 - II

ELECTROMAGNETIC
THEORY

DIGITAL SIGNAL
PROCESSING

COMMUNICATIONS
SYSTEMS I

BASIC ELECTRICITY

ELECTRONIC
PRINCIPLES

ENGLISH IV

LEVEL 300 - I

HIGH FREQUENCY
CIRCUITS
AND MICROWAVES

COMMUNICATIONS
SYSTEMS II

ELECTRONICS
APPLICATIONS

SWITCHING
NETWORKS
DESIGN

ENGLISH V

LEVEL 300 - II

ENTREPRENEURSHIP
AND
INNOVATION

PROPAGATION

DIGITAL SYSTEMS I

SUSTAINABILITY
SCIENCE

NETWORKS
SYSTEMS

PROJECT MANAGEMENT
AND TELECOMMUNICATIONS
REGULATION

LEVEL 400 - I

COMMUNITY
SERVICE
INTERNSHIPS

WIRELESS
COMMUNICATIONS

TELECOMMUNICATIONS
APPLICATION DESIGN

FIBER OPTICS

MULTIMEDIA
SERVICES
TRANSMISSION

SELECTED ELECTIVE
COURSE

LEVEL 400 - II

TELECOMMUNICATIONS
CAPSTONE COURSE

SELECTED ELECTIVE
COURSE

PRE-PROFESSIONAL
BUSINESS
INTERNSHIPS



By the way...

The Telecommunications Program stands out for its high job demand and ongoing technological innovation. It connects the world by enabling instant communication, global information access, and the operation of advanced technologies such as the Internet, mobile telephony, and streaming services, thus driving the digital economy and modern society.



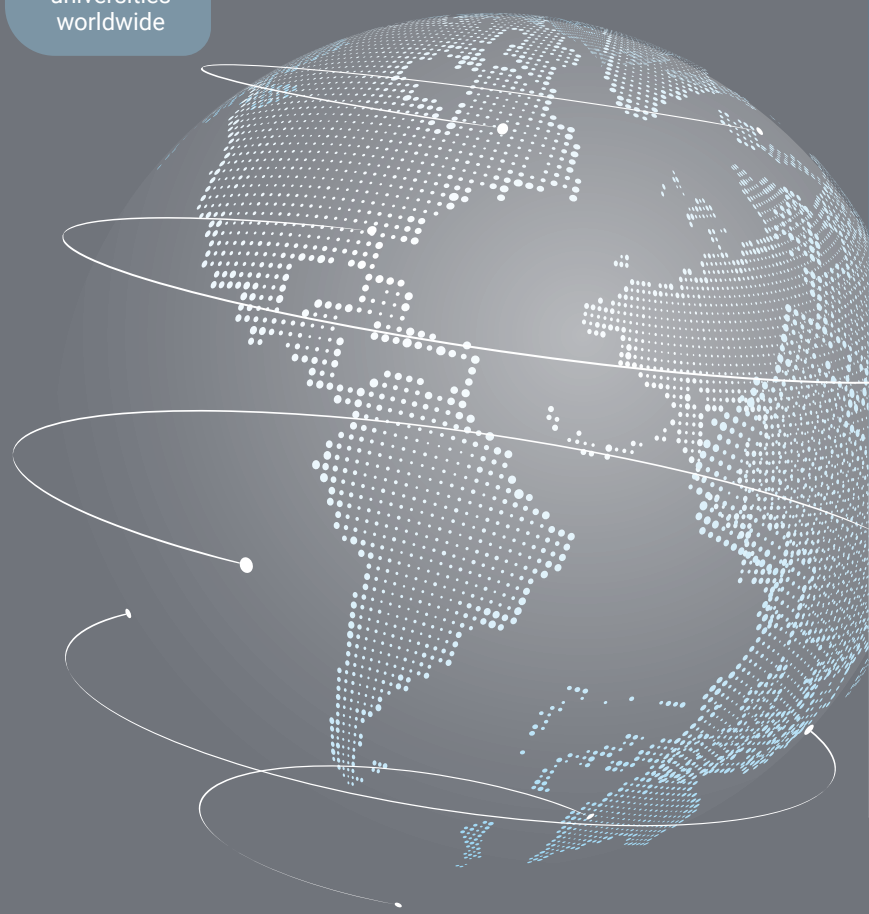
International Relations

ESPOL, through its Office of International Affairs, promotes and develops partnerships with cooperation agencies and academic and research institutions worldwide. These connections generate mobility opportunities for the entire polytechnic community and contribute to the academic excellence that defines our institution.

More than 165 agreements allow our students to undertake academic stays abroad, whether through semester-long or yearly exchanges, professional internships, research placements, and participation in conferences, competitions, and other academic activities.

106

universities
worldwide



Accredited Program



Did you know?

A Telecommunications graduate leads one of the country's top companies in Telecommunications services, overseeing the deployment of the national fiber-optic network and also spearheading the production and export of fiber optics. Telecommunications enable high-speed Internet connectivity, voice and video transmission, smart-home systems, industrial IoT, home automation, and much more.

www.fiec.espol.edu.ec

www.admision.espol.edu.ec

