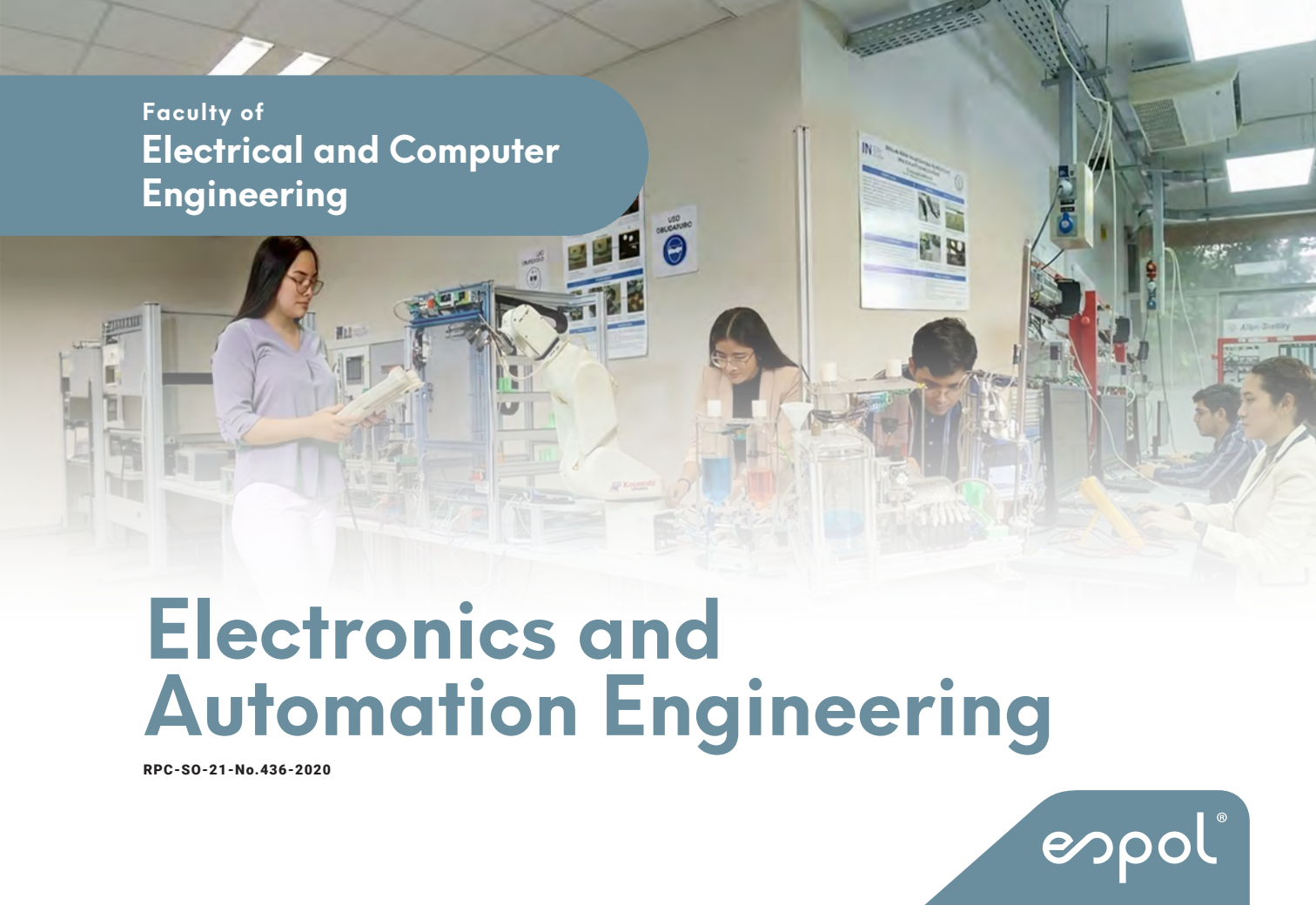


Faculty of  
**Electrical and Computer  
Engineering**



# **Electronics and Automation Engineering**

RPC-SO-21-No.436-2020

espol<sup>®</sup>

# Bachelor of Science in Electronics and Automation Engineering



## Applicant Profile

Applicants should demonstrate abilities in abstract thinking, logical reasoning, and comprehension, as well as basic knowledge of experimental sciences and mathematics.



## Employability

Electronics and Automation Engineers may work in areas such as:

- ▶ Consulting and implementation of projects in home automation, automation, robotics, industrial process digitalization, and Industry 4.0
- ▶ Design and implementation of digital control systems for electrical machines, energy efficiency, renewable energy, and other current application areas
- ▶ Research in digitalization, augmented reality, and applied intelligent systems
- ▶ Development of software applications for electrical, electronic, and industrial automation systems
- ▶ Design and implementation of industrial electrical and electronic installations, as well as management of preventive, predictive, and corrective maintenance plans
- ▶ Development and implementation of technology-based startups
- ▶ Design, manufacturing, and maintenance of electronic boards and equipment
- ▶ Production sectors: oil, gas, mining, metallurgy, manufacturing, food, agribusiness, aquaculture, pharmaceuticals, alternative energy, among others



## Professional Skills

Professionals with broad scientific, technical, and humanistic knowledge to design and implement comprehensive solutions for modern industry, related to electronics, robotics, instrumentation, process control, digitalization, automated systems, and Industry 4.0. To support this, the program has several modernized laboratories with strategic partnerships with companies such as Rockwell Automation and Siemens. In addition, some laboratories are equipped with digital twin tools. The objective is to optimize resources by operating in real time and technologically improving industrial processes toward smart industry.



## In fact...

The Electronics and Automation Engineering program is accredited by ABET and EUR-ACE, accrediting agencies for engineering and technology programs that award a seal of excellence to programs that meet the highest global quality standards.

LEARN MORE



# Curriculum

|            |                                             |                          |                            |                                             |                                                        |                                       |
|------------|---------------------------------------------|--------------------------|----------------------------|---------------------------------------------|--------------------------------------------------------|---------------------------------------|
| N 100 - I  | ARTS, SPORTS AND LANGUAGES ELECTIVE COURSES | PROBLEM SOLVING          | SINGLE VARIABLE CALCULUS   | PHYSICS: MECHANICS                          | GENERAL CHEMISTRY                                      | ENGLISH I                             |
| N 100 - II | LINEAR ALGEBRA                              | PROGRAMMING FUNDAMENTALS | VECTOR CALCULUS            | PHYSICS: ELECTRICITY AND MAGNETISM          | HUMANITIES ELECTIVE COURSES                            | ENGLISH II                            |
| N 200 - I  | DIFFERENTIAL EQUATIONS                      | STATISTICS               | COMMUNICATION              | DIGITAL SYSTEMS I                           | ELECTRICAL CIRCUITS                                    | ENGLISH III                           |
| N 200 - II | PROGRAMMING APPLIED TO AUTOMATION           | ELECTRONIC PRINCIPLES    | DIGITAL SYSTEMS II         | ELECTRICAL NETWORKS ANALYSIS                | CONTROL SYSTEMS                                        | ENGLISH IV                            |
| N 300 - I  | ENTREPRENEURSHIP AND INNOVATION             | ELECTRICAL INSTALLATIONS | INDUSTRIAL INSTRUMENTATION | MACHINES AND TRANSFORMERS                   | ADVANCED CONTROL                                       | ENGLISH V                             |
| N 300 - II | EMBEDDED SYSTEMS                            | POWER ELECTRONICS I      | ELECTRONICS APPLICATIONS   | AUTOMATION OF INDUSTRIAL PROCESSES          | SUSTAINABILITY SCIENCE                                 |                                       |
| N 400 - I  | INDUSTRIAL ROBOTICS                         | POWER ELECTRONICS II     |                            | INDUSTRIAL COMMUNICATIONS AND SCADA SYSTEMS | COMMUNITY SERVICE INTERNSHIPS                          | SELECTED ELECTIVE COURSE              |
| N 400 - II |                                             |                          |                            |                                             | ELECTRONICS AND AUTOMATION ENGINEERING CAPSTONE COURSE | SELECTED ELECTIVE COURSE              |
|            |                                             |                          |                            |                                             |                                                        | PRE-PROFESSIONAL BUSINESS INTERNSHIPS |



## Accredited Program



Engineering  
Accreditation  
Commission



## Did you know?

ESPOL ranks first in Ecuador in the Engineering – Electrical and Electronic subject area, according to the QS World University Rankings by Subject 2026, and is positioned among the top 350 universities worldwide in this category. ESPOL trains highly qualified professionals in electronics, control engineering, automation, robotics, and intelligent systems.

[www.fiec.espol.edu.ec](http://www.fiec.espol.edu.ec)

[www.admision.espol.edu.ec](http://www.admision.espol.edu.ec)



## 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

