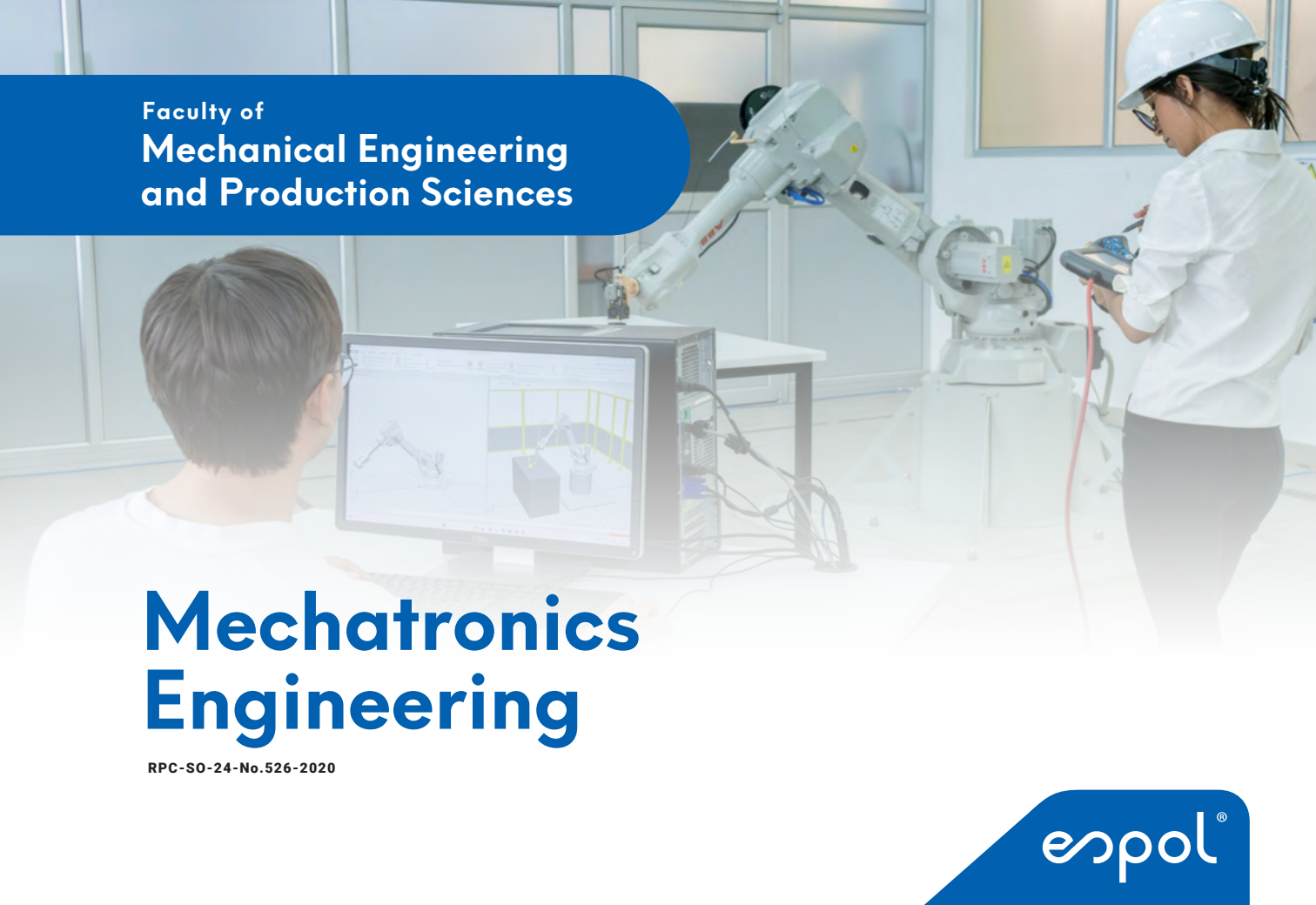




Faculty of
**Mechanical Engineering
and Production Sciences**

Mechatronics Engineering

RPC-S0-24-No.526-2020

espol[®]

Bachelor of Science in Mechatronics Engineering



Applicant Profile

Applicants should have an interest in technology, mathematics, physics, and programming, as well as analytical and problem-solving skills. Creativity, curiosity, and a willingness to continuously learn are highly valued, along with an interest in developing innovative solutions in interdisciplinary environments.



Professional Skills

After four and a half years, students will be able to design, integrate, and optimize complex technological systems that combine mechanics, electronics, control systems, and computing, while developing competencies to:

- ▶ Design automated systems, robotic systems, and innovative mechatronic solutions
- ▶ Integrate sensors, actuators, and control systems into industrial environments
- ▶ Program and develop embedded systems and intelligent platforms
- ▶ Analyze, model, and simulate physical systems and technological processes
- ▶ Implement real-time monitoring and control solutions
- ▶ Manage technological projects with a focus on efficiency, sustainability, and innovation

These skills will enable students to respond to the challenges of modern industry and lead technological transformation processes.



Employability

Mechatronics Engineering offers strong career prospects in today's context of technological and industrial advancement. Students will be able to work in areas such as robotics, artificial intelligence, automation, manufacturing, and intelligent systems. They will be prepared to design and implement technological solutions, optimize processes, and lead interdisciplinary projects across different sectors.

In addition, students will acquire the necessary tools to develop innovative initiatives with economic and social impact within a dynamic professional environment, with broad opportunities both nationally and internationally.



In fact...

ESPOL Mechatronics Engineering Alumni work professionally in areas such as robotics, artificial intelligence, research, automation, programming, machine design, maintenance, and industrial installations. They do not simply adapt to change; they create it and lead it.



LEARN MORE



Curriculum

N 100 - I	ARTS, SPORTS AND LANGUAGES ELECTIVE COURSES	SINGLE VARIABLE CALCULUS	PHYSICS: MECHANICS	PROGRAMMING FUNDAMENTALS	PROBLEM SOLVING		ENGLISH I
N 100 - II	LINEAR ALGEBRA	VECTOR CALCULUS	PHYSICS: ELECTRICITY AND MAGNETISM	ENGINEERING DRAWING	COMMUNICATION		ENGLISH II
N 200 - I	DIFFERENTIAL EQUATIONS	NUMERICAL METHODS	VECTOR MECHANICS	DIGITAL SYSTEMS I	INTRODUCTION TO MECHATRONICS		ENGLISH III
N 200 - II	HIGHER MATHEMATICS		MACHINE ELEMENTS DESIGN	BASIC ELECTRICITY	OBJECT ORIENTED PROGRAMMING		ENGLISH IV
N 300 - I		APPLIED CONTROL SYSTEMS	INTRODUCTION TO MANUFACTURING	STATISTICS	ELECTRONIC PRINCIPLES	TELEMATICS SYSTEMS PROGRAMMING	ENGLISH V
N 300 - II		INDUSTRIAL INSTRUMENTATION	MECHANICS OF MACHINERY	THERMOFLUIDS	MECHATRONIC ACTUATORS	SUSTAINABILITY SCIENCE	COMMUNITY SERVICE INTERNSHIPS
N 400 - I	HUMANITIES ELECTIVE COURSES	INDUSTRIAL MONITORING AND CONTROL SYSTEMS	COMPUTER AIDED DESIGN AND MANUFACTURING	MACHINE DESIGN AND SIMULATION	MOBILE AND ARTICULATED ROBOTS	EMBEDDED SYSTEMS	
N 400 - II	ENTREPRENEURSHIP AND INNOVATION	MECHATRONIC DESIGN	FLEXIBLE MANUFACTURING SYSTEMS	HYDRAULICS AND PNEUMATICS	BIOMECHATRONIC SYSTEMS		SELECTED ELECTIVE COURSE
N 500 - I						MECHATRONICS ENGINEERING CAPSTONE COURSE	SELECTED ELECTIVE COURSE
							PRE-PROFESSIONAL BUSINESS INTERNSHIPS



Accredited Program



Did you know?

Many of the technologies transforming the world today, such as robots, intelligent vehicles, and automated systems, are created by mechatronics engineers. In this program, students learn how to design, program, and bring these technologies to life. From industry to healthcare, energy, and mobility, mechatronics is at the center of innovation.

www.fimcp.espol.edu.ec

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

