

Electronic Engineering

Program educational mission:

Provide quality higher technological education, developing well-rounded proficient professionals, with high sense of social responsibility, solid education in science, technology and innovation, who contribute to the sustainable development of the country.

Program educational objectives:

Career. The graduates apply their solid formation in electronics engineering as a part of an interdisciplinary team, for successfully solving any situation their professional life presents to them.

Lifelong learning. The graduates remain in the everlasting pursuit of scientific cultural and technological knowledge for ensuring their professional and personal development.

Integral behavior-Ethics. The graduates have a permanent commitment to pursue a harmonic development in the environment and the society, in a global perspective.

Program student outcomes:

1. Ability for creating, innovating and transferring technology by efficiently using the methods and procedures of electronics engineering in projects that consider the perspective of sustainability.
2. An ability to plan, organize, lead and control activities of installation, to improve standard operations and maintenance procedures or the update of electronic equipment systems.
3. An ability to use new information technologies for data acquisition and processing.
4. To perform the engineering profession with an ethical and legal responsibility.
5. To lead and participate in interdisciplinary work teams in a global context, with efficient communication both oral and written. To lead and participate in interdisciplinary work teams in a global context, with efficient oral and written communication.
6. To simulate models in advanced computational platforms for predicting the electronics system behavior.

Student Outcomes:

- (a) An ability to apply knowledge of mathematics, science, and engineering.
- (b) An ability to design and conduct experiments, as well as to analyze and interpret data.
- (c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- (d) An ability to function on multidisciplinary teams.
- (e) An ability to identify, formulate, and solve engineering problems.
- (f) An understanding of professional and ethical responsibility.
- (g) An ability to communicate effectively.
- (h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- (i) A recognition of the need for, and an ability to engage in life-long learning.
- (j) A knowledge of contemporary issues.
- (k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

COURSES OF THE STUDY PLAN

Year 1 – Semester 1	
Differential Calculus	Chemistry
Classical Mechanics	Human Communication
Research Fundamentals	Ethics Seminar
Complementary activities	
Year 1 – Semester 2	
Integral Calculus	Probability and Statistics
Electrical Measurements	Physics Selected Subjects
Human Development	Sustainable Development
Year 2 – Semester 1	
Vector Calculus	Linear Algebra
Physics of Semiconductors	Electromagnetism
Structured Programming	
Year 2 – Semester 2	
Legal Framework of Enterprises	Electrical Circuits I
Differential Equations	Numerical Methods
Diodes and transistors	Visual Programming
Year 3 – Semester 1	
Introduction to Telecommunications	Electrical Circuits II
Electromagnetic Theory	Design of Transistors
Digital Design	Professional Development
Year 3 – Semester 2	
Electrical Machines	Control I
Primer of Financing	Operational Amplifiers
Digital Design with VHDL	Research Seminar I
Fluid Power	
Year 4 – Semester 1	
Electrical Machines Control	Control II
Optoelectronics	Power Electronics
Microcontrollers	Research Seminar II
Community Service	
Year 4 – Semester 2	
Programmable Logic Controllers	Digital Control
Instrumentation	Fundamentals of Technology Applied to Robotics
Business Management	Projects Design and Evaluation
Year 5 – Semester 1	
Selected Topics in Electronic Engineering	Advanced Course on Programmable Logic Controllers
Internship	

STATISTICS OF THE PROGRAM:

Year	Freshman enrollment	Program Enrollment	Awarded
2010	160	526	42
2011	136	542	67
2012	146	543	44
2013	176	583	77
2014	113	551	78
2015	109	543	71
2016	84	484	38