Electronic Engineering

Duration
Eleven semesters

Degree
Electronic Engineer

Occupational Field

The Electronic Engineer can carry out their profession in activities related to heavy industry, light industry, communications companies, power generation companies, information processing companies, healthcare facilities, teaching and research centers. Private practice.

Professional Profile

The Electronic Engineer can project, design, construct and work on systems, equipment, and components for:

1. Electrical, electromagnetic, optical, acoustic, etc., signal processing.
2. Communications, including space communications, at all frequencies and power levels.
3. Electronic data processing (hardware and software).
4. Electronics for navigation of land, air, maritime vehicles, etc.
5. Electronic control or automation for any application.

They can also provide legal, economic, and financial advice; arbitration, expertise, hygiene, industrial safety, and environmental controls related to the items mentioned above.

Study Plan (2006)

YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
1	1	1	Calculus I	8.00
1	1	2	Algebra	5.00
1	1	3	Chemistry	5.00
1	1	4	Computing I	5.00

1	1	5	Writing Works - Oral Expression	2.00
1	2	6	Drawing and Computer-Assisted Design	3.00
1	2	7	Analytic Geometry	5.00
1	2	8	Physics I	10.00
1	2	9	Computing II	7.00
1	2	10	Introduction to Engineering	3.00
2	3	11	Calculus II	8.00
2	3	12	Statistics	5.00
2	3	13	Physics II	8.00
2	3	14	English I	3.00
2	4	15	Numerical Methods	4.00
2	4	16	Applied Maths	5.00
2	4	17	Circuits Theory	9.00
2	4	18	Fundamentals of Electronic Devices	5.00
2	4	19	English II	3.00
3	5	20	Control I	5.00
3	5	21	Digital Electronics I	7.00
3	5	22	Analog Electronics I	7.00
3	5	23	Propagation and Radiation	5.00
3	5	24	Economy and Business	5.00
3	6	25	Control II	6.00
3	6	26	Digital Electronics II	7.00
3	6	27	Analog Electronics II	7.00
3	6	28	Analog Signal Processing	5.00
3	6	29	Legal Engineering and Environmental Management	5.00
4	7	30	Control III	6.00
4	7	31	Digital Signal Processing	5.00
4	7	32	Electrical Machines	5.00
4	7	33	Telecommunications I	7.00

4	7	34	Production Management and Organization	6.00
4	8	35	Control Systems	7.00
4	8	36	Digital Electronics III	7.00
4	8	37	Power Electronics	7.00
4	8	38	Telecommunications II	7.00
4	8	39	Human Resources in the Company	3.00
5	9	40	Technological Optative I	6.00
5	9	41	Technological Optative II	6.00
5	9	42	Technological Optative III	6.00
5	9	43	Technological Optative IV	6.00
5	9	44	Complementary Optative	6.00
5	10	45	Final Project Work	510.00
5	10	46	Supervised Professional Practice	200.00
				Total subjects: 46

COMPLEMENTARY OPTATIVES				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
			Management Tools	0
			Education and Society	0
			Economic, Social and Political Reality	0

TECHNOLOGICAL OPTATIVES				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
			Modern Control Design	0
			Non -Linear Systems	0
			Introduction to Robotics	0
			Identification and Adaptive Control	0
			Artificial Intelligence Plugins	0
			Industrial Systems for Control	0

			Electric Power Facilities	0
			Specific Telecommunications Issues I	0
			Specific Telecommunications Issues II	0
			Ultrasound Industrial Applications	0
			Microcontrollers	0
			Industrial Computing	0
			Informatic Complements	0
			Data Networks	0
			Specific Control Issues I	0
			Specific Digital Electronics I Topics I	0
			Analog Electronics Complement I	5
			Specific Telecommunications Issues III	0
			Analog Electronics Complement I	0

Study Plan (2023)

N°	YEAR	SUBJECT	WEEKLY HOURS	TOTAL HOURS
1	1	Calculus I	7,5	105
2	1	Algebra and Analytical Geometry	7,5	105
3	1	Introduction to Digital Systems	6	84
4	1	Introduction to Engineering	6	84
5	1	Physics I	9	126
6	1	Chemistry	6	84
7	1	Programming A	6	84
8	1	Technical English	6	84
9	2	Calculus II	7,5	105
10	2	Physics II	7,5	105
11	2	Programming B	6	84
12	2	Representation Systems	6	84
13	2	Signals and Systems	7,5	105
14	2	Electrotechnics A	7,5	105
15	2	Probability and Statistics	6	84

16	2	Economy and Legislation	6	84
17	3	Control A	6	84
18	3	Electronics A	6	84
19	3	Propagation and Radiation	7,5	105
20	3	Digital Systems A	7,5	105
21	3	Signals Processing	7,5	105
22	3	Control B	6	84
23	3	Electronics B	7,5	105
24	3	Integrative project I	6	84
25	4	Electrotechnics B	6	84
26	4	Telecommunications A	7,5	105
27	4	Digital Systems B	7,5	105
28	4	Management and Organization	6	84
29	4	Electronics C	6	84
30	4	Telecommunications B	7,5	105
31	4	Digital Systems C	6	84
32	4	Integrative Project II	7,5	105
33	5	Identification, Simulation and Optimization	6	84
34	5	Industrial Control	7,5	105
35	5	Electronics D	7,5	105
36	5	Elective Subject I	6	84
37	5	Elective Subject II	6	84
38	5	Elective Subject III	6	84
39	5	Professional Engineering Practice	6	84
40	5	Integrative Project III	9	126
41	5	Supervised Professional Practice		200
TOTAL HOURS OF THE STUDY PLAN				3980

ELECTIVES

ELECTROTECHNICAL AND ELECTRONIC AREA

Electric Power Facilities	Electrotechnics and Electronics
Biomedical Instrumentation	Electrotechnics and Electronics
Sound and Acoustic Measurements	Electrotechnics and Electronics

PROGRAMMING AND DIGITAL SYSTEMS AREA

Microcontrollers	Programming and Digital Systems
Informatic Complements	Programming and Digital Systems
Artificial Intelligence	Programming and Digital Systems
Digital Systems Design	Programming and Digital Systems

TELECOMMUNICATIONS AREA

Data Networks	Telecommunications
Software Defined Radio	Telecommunications

CONTROL AND AUTOMATION AREA

Modern Control Design	Control and Automation
Non -Linear Systems	Control and Automation
Robotics	Control and Automation
Identification and Adaptive Control	Control and Automation
Industrial Systems for Control	Control and Automation

SIGNAL AND IMAGE PROCESSING AREA

Artificial Vision	Signal and Image Processing
Ultrasound Systems	Signal and Image Processing

COMPLEMENTARY SCIENCES AND TECHNOLOGIES AREA

Human Resources in the Company	Complementary Sciences and Technologies
Methods and Tools for Distance Education	Complementary Sciences and Technologies