



Electrical Engineering

Duration

Ten semesters

Degree

Electrical Engineer

Occupational Field

Graduates of this program can perform effectively in all fields related to the production, transportation, and commercialization of electrical energy, especially in the manufacturing industry of electrical devices, components, and installations, as well as in the planning and operation of electrical power supply systems and the functioning of electrical markets.

Professional Profile

The electrical engineer is a professional with a solid foundational education in maths and physics, with a strong emphasis on electrotechnics. They have computer knowledge acquired from the beginning of the career. They are embedded in an integrative vision of the various areas that make up the profession and can formulate, analyze, define, and solve complex engineering problems.

Study Plan

YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
1	1	1	Algebra and Analytical Geometry	7.00
1	1	2	Calculus I	8.00
1	1	3	Chemistry	3.00
1	1	4	Introduction to Electrical Engineering	3.00
1	2	5	Physics I	10.00
1	2	6	Computing	9.00
1	2	7	Drawing and Computer-Assisted Design	3.00
1	2	8	Epistemology	4.00



2	3	9	Calculus II	8.00
2	3	10	Physics II	8.00
2	3	11	Mechanics and Material Resistance	7.00
2	3	12	Practice and Laboratory I	4.00
2	4	13	Complex Variable and Probability Theory	11.00
2	4	14	Electrotechnics I (Analysis of Electrical Circuits)	8.00
2	4	15	Electrotechnics II (Applied Electrotechnics)	15.00
3	5	16	Optimization Methods and Numerical Methods	9.00
3	5	17	Electrotechnics III (Electrical Measures and Materials)	11.00
3	5	18	Electrotechnics IV (Principles of Electrotechnics and Telecommunications)	7.00
3	5	19	Law and Legislation	4.00
3	6	20	Motor Machines	14.00
3	6	21	Electric Machines - Stationary State	9.00
3	6	22	Control Theory	7.00
3	6	23	Practice and Laboratory II	4.00
4	7	24	Power Electronics	7.00
4	7	25	Electric Machines. - Transitional Behavior and Design	7.00
4	7	26	Industrial Facilities and Security	7.00
4	7	27	Economy and Business	10.00
4	8	28	Electric Centrals	8.00
4	8	29	Electric Power Transmission and Distribution	8.00
4	8	30	Operation, Control and Protection of Electrical Systems	8.00



4	8	31	Practice and Laboratory III	7.00
5	9	32	Subject 1: Selected Guidance	8.00
5	9	33	Subject 2: Selected Guidance	8.00
5	9	34	Subject 3: Selected Orientation	8.00
5	10	35	Thesis	0
				Total subjects: 35

ORIENTATION A	ORIENTATION A: Power System and Electrical Market
SUBJECT	HOURLY CREDIT
Electrical Systems Operation Analysis	0.00
Electrical Systems Planning	0.00
Energy Economics, Structure of Electrical Market, Electricity Costs and Rates	0.00
ORIENTATION B	ORIENTATION B: Power Electronics and Renewable Energies in Electrical Systems
SUBJECT	HOURLY CREDIT
Electrical Systems Operation Analysis	0.00
Use of Alternative Energies for Electrical Generation	0.00
Control of Electrical Systems With Electrical Power Devices	0.00
ORIENTATION C	ORIENTATION C: Installations, Electrical Machines, and High Voltage Techniques
SUBJECT	HOURLY CREDIT
Protection of Machines and Equipment in Medium and Low Voltage	0.00
High Voltage Techniques (Test and Reception of High Voltage Equipment)	0.00
Formulation and Technical-Economic Evaluation of Electrical Projects	0.00