Civil Engineering

Duration
Ten semesters

Degree
Civil Engineer

Career Objectives:

To obtain a professional committed to the social environment, contributing to regional and national development. Achieve a good conjunction between what is planned and executed, in environmental prevention.

Occupational Field:

Civil Engineers can work in consulting firms, national or provincial government agencies, and private companies, both in project development, inspections, and construction execution.

Professional Profile:

Upon completing the requirements of the Study Plan, the graduate must acquire:

a. Adequate training in Basic Sciences and Engineering Sciences.
b. Knowledge of Research and Technological Development processes.
c. Ability to formulate reflective and critical intellectual methodologies involving analysis-synthesis processes, inductive-deductive reasoning, creative thinking, and a spirit of self-critique to develop concepts, solve problems, plan, and make decisions.
d. Ability to logically and clearly communicate ideas.
e. Professional qualities of commitment, responsibility, initiative, and participation.
f. Entrepreneurial qualities and attitudes.

Must be capable of:

a. Identifying, studying, and solving interdisciplinary scientific and technological problems.
b. Interpreting the relationship between Science, Technology, and Nature with Socioeconomic Structure, to plan their development and well-being, improve the quality of life for inhabitants, and preserve ecological balance.
c. Promoting autonomous regional and national development.

d. Understanding the natural and social world in which they operate.

Study Plan:

YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
1	1	1	Computing	6.00
1	1	2	Calculus I	9.00
1	1	3	Introduction to Civil Engineering	8.00
1	1	4	Algebra and Analytic Geometry	8.00
1	2	5	Environmental Management	8.00
1	2	6	Chemistry	5.00
1	2	7	Drawing Representation Systems	7.00
1	2	8	Physics I	11.00
2	3	9	Statistics	6.00
2	3	10	Calculus II	9.00
2	3	11	Architecture and Urbanism	8.00
2	3	12	Physics II	10.00
2	4	13	Stability I	12.00
2	4	14	Study and Testing of Materials	10.00
2	4	15	Numerical Methods	5.00
2	4	16	Building Construction and Installation	10.00
2	5	17	Applied Geology	9.00
3	5	18	Stability II	12.00
3	5	19	General Hydraulics	10.00
3	5	20	Topography and Geodesy	8.00
3	6	21	Soil Mechanics	12.00
3	6	22	Hydrology, Irrigation and Drainage	9.00
3	6	23	Concrete I	12.00
3	6	24	Organization	7.00
3	7	25	Metallic and Wood Structures	12.00
3	7	26	Stability III	12.00
4	7	27	Communication Routes I	9.00
4	7	28	Legal Engineering Appraisals	7.00
4	8	29	Concrete II and Structural Masonry	11.00
4	8	30	Economics and Project Evaluation	8.00

4	8	31	Communication Routes II	9.00
4	8	32	Hydraulic and Port Works	11.00
4	9	33	Sanitary and Environmental Engineering	9.00
4	9	34	Civil Works Management	7.00
4	9	35	Elective I	8.00
4	9	36	Elective II	8.00
5	9	41	Final Project	0.00
5	9	37	Quality, Hygiene and Safety in Construction	8.00
5	9	38	Elective III	8.00
5	9	39	Elective IV	8.00
5	9	40	Elective V	8.00
				TOTAL = 41

ELECTIVE I				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
	9		Traditional Home	0.00
	9		Finite Elements Methods	0.00
	9		International Courses - Student Mobility Programs	0.00

ELECTIVE II				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
	10		Seismic Protection Systems of Structures	0.00
	10		Physical Models	0.00

ELECTIVE III				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
	10		Industrial Plants	0.00
	10		Water Management	0.00

ELECTIVE IV				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
	10		Course Accreditation for a Total of 84 Hours	0.00
	10		Structural Analysis Workshop Using Professional Use Software	0.00

OPTATIVES I				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
		61	Special Structures	8.00
		62	Architecture	8.00
		63	Transport	8.00
		64	Irrigation and Drainage Systems	8.00
		65	Geotechnical and Foundations	8.00

OPTATIVES II				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
		66	Earthquake Resistant Engineering	8.00
		67	Machines and Equipment	8.00
		68	Materials and Pavements	8.00
		69	Top Hydraulic	8.00
		70	Elective I	8.00

OPTATIVES III				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
		71	Concrete and Steel Structures	8.00
		72	Bioclimatic Engineering	8.00
		73	Superior Geometric Design	8.00
		74	Hydrological Studies	8.00
		75	Elective II	8.00

OPTATIVES IV				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
		76	Bridges and Viaducts	8.00
		77	Special Designs	8.00
		78	Fluvial and Experimental Hydraulics	8.00
		79	Technology and Concrete Construction	8.00
		80	Elective III	8.00

OPTATIVES V				
YEAR	SEM.	N°	SUBJECTS	HOURLY CREDIT
		81	Rock Mechanics	8.00
		82	Building Construction	8.00
		83	Management, Operation and Conservation of Roads	8.00
		84	Hydroelectric Uses and Reservoir Dams	8.00
		85	Elective IV	8.00