Land Surveying Engineering

Duration
Ten semesters

Degree
Land Surveying Engineer

Occupational Field

The work of land surveyors is carried out independently or in a dependent relationship, either in public organizations or private companies.

Independently, this professional can perform surveys, land subdivisions, and urbanization projects; appraisals and expert assessments for real estate and judicial purposes; rural surveys to improve irrigation systems in agriculture, etc. In a dependent relationship within various provincial and national government departments, they can perform tasks in areas such as Geodesy and Cadastre Management, Municipalities, Roadways, or Hydraulics.

In the private sector, they can work for companies involved in road construction, power lines, gas pipelines, or dams, among others, conducting special measurements to obtain the necessary layout of works and calculating the volumes of projects.

Professional Profile

The Land Surveyor must possess the necessary knowledge to capture, process, analyze and represent spatial information from a perspective that allows them to: -The design and the execution of real estate registration systems, the determination, the delimitation and the valuation of territorial space, the participation in territorial planning, the surveying of surface and subsurface, the construction of geometric structures implicit in all types of engineering projects and the generation of cartography and georeferenced information systems.

Therefore, education should be based on theoretical and methodological foundations that provide legal, socio-economic, and technological support to their professional activity. They must interpret economic variables, define real estate evaluation methodologies, and apply specific surveying legal knowledge. They should apply formulas and perform

necessary calculations for the use related to the capture and processing of spatial information, utilizing specialized computer science in the fields mentioned. Much of the surveying field is characterized by rapid and constant evolution, requiring the professional to have an attitude of continuous updating and an inherent willingness to participate in multidisciplinary teams. They must be capable of responding to environmental requirements from the perspective of advising, planning, directing, executing, and overseeing specialized work and conducting research tasks related to their profession.

Requirements

In addition to completing and passing the courses, the student must:

- Demonstrate proficiency in two levels of English language.
- Complete and pass the Curricular Course "Computer-Assisted Drawing".
- Undertake a Supervised Professional Practice.
- Complete and pass a bachelor's thesis (Final Project).

Study Plan

YEAR	SEM.	SUBJECT
1º	1º	Mathematical Analysis I
1º	1º	Numerical Calculus
1º	1º	Computing
1º	2º	Analytic Geometry
1º	2º	Topography I
1º	2º	Drawing and Representation System
2º	3º	Mathematical Analysis II
2º	3º	Topography II
2º	3º	Economy
2º	4º	Physics I
2º	4º	Applied Maths
2º	4º	Geology and Physiography Elements
3º	5º	Physics II
3º	5º	Applied Topography
3º	5º	Building and Agrology Elements
3º	6º	Applied Topography

3º	6º	Topographic Networks
3º	6º	Legal Land Surveying I
4º	7º	Geophysics Elements
4º	7º	Plot Survey Acts
4º	7º	Valuations
4º	8º	Geodesy I
4º	8º	Subdivisions and Urbanizations
4º	8º	Remote Sensing and Photointerpretation
5º	9º	Geodesy II
5º	9º	Mathematical Cartography
5º	9º	Photogrammetry
5º	10º	Territorial Information Systems
5º	10º	Legal Land Surveying II
5º	10º	Cadastre

Requirements

- English I
- English II
- Professional Practice
- Hygiene and Safety
- Final Work