SCIENCE AND TECHNOLOGY

Civil Engineering

Objectives
To train students in the application of suitable modern technology in order to make good use of natural and human resources in the creation of constructions that allow for the harmonic development of urban areas, taking into account the stages of planning, organization, direction, control, design, development, construction, and maintenance. Emphasis is placed on using computational tools and the materials lab.

Student Profile
The student in this program should:
- Be able to analyze and synthesize;
- Be proactive;
- Enjoy doing outdoor activities;
- Be willing to work in groups;
- Be creative and dynamic.

Areas for Potential Employment
Graduates of this program will be able to: work in public or private sectors as foremen, estimators, structural-work supervisors, resident engineers, construction superintendents, contractors and subcontractors, quality-control managers, project programmers, construction-company executives, project directors, technical consultants, researchers, and teachers, among others.

First Semester
-Algebra I
-Differential and Integral Calculus
-Drawing
-Analytical Geometry
-Introduction to Engineering
-Introduction to Computing

Second Semester
-Algebra II
-Philosophical Anthropology
-Vectorial Calculus
-Computers and Programming
-Statics
-General Topography: Theory and Practice
-Oral and Written Communication

Third Semester
-Dynamics I
-Isostatic Structures
-Differential Equations
-The Logic and Philosophy of Science
-Numerical Methods
-Probability and Statistics

Fourth Semester
-Dynamics II
-Basic Geology
-Mechanics of Materials I
-Construction I
-Hydraulics I
-Operations Research I

Fifth Semester
-Soil Behavior
-Environmental Engineering
-Construction II
-Hydraulics II
-Operations Research II
-Mechanics of Materials II

Sixth Semester
-Project Management
-Structural Analysis I
-Construction III
-Hydraulics III
-Hydrology
-Soil Mechanics
-Research Methodology

Seventh Semester
-Heavy Construction
-Structural Analysis II
-Structural Design
-Concrete Structures I
-Applied Geology
-Economic Engineering
-Hydraulic Projects

Eighth Semester
-Financial Analysis of Projects
-Foundations I
-Building I
-Metal Structures
-Sanitary Engineering
-Planning
-Road Construction

Ninth Semester
-Computer Science Applied to Civil Engineering
-Elective
-Elective
-Elective

Elective Subjects
-Foundations II
-Treatment Plant Design
-Concrete Structures II
-Seismic Engineering
-Earth Movement
-Road Surfaces
-Bridge Design
-Ports and Marine Structures
-Transportation Systems