

# Computer Systems Engineering

## Objectives

To train professionals in the area of computer systems, providing them with the theoretical and the practical knowledge needed to manage, develop, set up, and control systems.

## Student Profile

The student in this program should:

- Like technical knowledge;
- Be able to analyze and synthesize;
- Have assessment skills;
- Be creative;
- Like scientific disciplines;
- Be able to reason logically;
- Be enterprising;
- Be interested in doing research;
- Be able to apply critical judgment.

## Areas for Potential Employment

Graduates of this program will be able to work in the public and private sectors, in business or industries requiring or using electronic systems based on computers for productive, commercial, or servicing purposes. Graduates will also develop artificial-intelligence systems in the areas of voice recognition, image processing, and expert systems of simulation, as well as incorporate the latest technology in network design, distribution systems, and in systems whose purpose is to audit and safeguard computer systems.

### First Semester

- Algebra and Analytical Geometry
- Differential and Integral Calculus
- General Physics
- Introduction to Engineering
- Introduction to Computers
- Equipment Management Laboratory

### Second Semester

- Cost Accounting and Administration
- Linear Algebra
- Vectorial Calculus
- Statics
- Computational Tools
- Formal Logic and Algorithms

### Third Semester

- Dynamics
- Logical Design
- Differential Equations
- Electricity and Magnetism
- Advanced Programming
- Techniques for Oral and Written Expression

### Fourth Semester

- Human Resources Management
- Analysis of Electric Circuits
- Philosophical Anthropology

- Economic Engineering
- Numerical Methods
- Probability and Statistics
- Quality Systems

### Fifth Semester

- Data Structure
- Legal Framework for Computing
- Assembler Language
- Computer Lab Organization
- Databases I
- Elective
- Elective

### Sixth Semester

- Computer Architecture I
- Project Planning and Development
- Memories and Peripherals
- Operative Systems I
- Elective
- Elective
- Elective

### Seventh Semester

- Microprocessors
- Minicomputer Systems I
- Teleprocessing
- Professional Ethics
- Elective
- Elective
- Elective

### Eighth Semester

- Internship
- Business Development
- Computer Networks
- Elective
- Elective
- Elective
- Elective

### Elective Subjects

- Analysis of Algorithms I
- Systems Analysis I
- Software Engineering I
- Software Engineering II
- Operating Systems II
- Distributed Systems
- Systems Applied to Management
- Instructional Technology
- Databases II
- Computer Graphics
- Minicomputer Systems II
- Systems Analysis II
- Software Project Management
- Computer Architecture II
- Business Programming
- Computer Maintenance
- Computer Systems Auditing
- Compilers
- Artificial Intelligence
- Expert Systems
- Object-Oriented Programming
- Image Processing
- Programming Language

