



## Bachelor in Software Engineering

### Short Description:

The Bachelor of Software Engineering has been designed to prepare students for a successful career in the software industry and the information technology sector by teaching them a breadth and depth of knowledge of software engineering that combines theory and practice of Computer Science and Engineering. Students will also acquire communication skills and become proficient in engineering design, particularly as it applies to software development and software systems.

The Objectives of this program are to acquire knowledge and skills in the following areas:

### Target Skills:

- Ability to understand all aspects of software development process from the early design stages to long-term software maintenance and evolution;
- the ability to construct and evaluate software in the context of physical systems and real-world applications;
- the ability to apply engineering design principles to software development including trade-off analyses;
- the ability to understand criteria of software quality and assurance;
- the ability to plan and manage large software projects;
- the ability to work independently and in team;
- the ability to understand engineering economics and entrepreneurship in software practice;
- the ability to understand the underlying principles on which physical systems and real-world applications are built on;
- the ability to integrate and participate in the design process of these systems and applications;
- the capability to communicate effectively both orally and in writing; and a breadth of knowledge and skills in software engineering, as well as related areas of engineering, computer science, mathematics and complementary studies.

### Some of the typical Career Opportunities:

- Design enterprise information systems
- Business Analyst
- Software Architect
- Software Tester
- Software Project Manager
- Information Specialist
- Systems Administrator
- Website Manager
- E-commerce Developer
- Decision Support Systems Developer
- Database Designer and Manager
- Software Developer

## FIRST YEAR

## SECOND YEAR

### FIRST SEMESTER

- Introduction to Economics
- Academic Reading & Writing I
- Calculus I
- Computer Applications

#### *Electives*

- Introduction to Psychology
- History of Economics
- Research Methods

### SECOND SEMESTER

- Academic Reading & Writing II
- Linear Algebra
- Introduction to Statistics
- Computer Communications & Networks
- Computer Science Fundamentals

### THIRD SEMESTER

- Fundamentals of Programming I
- Fundamentals of Physics
- Engineering Fundamentals
- Calculus II
- Ethics

### FORTH SEMESTER

- Fundamentals of Programming II
- Calculus III
- Introduction to Software Engineering
- Engineering Chemistry
- Security Engineering

## THIRD YEAR

### FIFTH SEMESTER

- Database Systems
- Introduction to Operating Systems
- Computer Architecture and Assembly Language/ Microprocessor Systems
- Software Architecture and Systems
- Software Project Management

### SIXTH SEMESTER

- Introduction to WebDesign
- Systems Dynamics

#### *Electives, one of:*

- Applied Logic for Computer Science
- Software Evolution
- Computer Communications & Networks II

#### *Electives, one of:*

- Embedded Systems
- Software Quality Engineering
- Globalization and Technological Development

**Internship: 3 Credit**

**Thesis : 3 Credits**

*\*Each course is 3 Credits (6 ECTS)*

