10 YEARS of excellence! CIT CANADIAN INSTITUTE OF TECHNOLOGY

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.

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

CANADIAN INSTITUTE OF TECHNOLOGY
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BACHELOR IN **SOFTWARE ENGINEERING**

FIRST YEAR

FIRST SEMESTER

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

Electives One of:

- Research Methods
- Introduction to Psychology
- History of Economics

SECOND SEMESTER

- Computer Science Fundamentals
- Introduction to Statistics
- Linear Algebra
- Computer Communications and Networks
- Physics I

SECOND YEAR

THIRD SEMESTER

- Fundamentals of Programming I
- Physics II
- Electric Circuits
- E-commerce and Innovation
- Calculus II

FOURTH SEMESTER

- Fundamentals of Programming II
- Engineering Chemistry
- Introduction to Software Engineering
- Calculus III
- Software Architecture and Systems

THIRD YEAR

FIFTH SEMESTER

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

SIXTH SEMESTER

- Introduction to Web Design
- System Dynamics

Electives One of:

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

- **Internship**
- **Thesis**

*Each course is 3 Credits (6 ECTS)

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