CIT
CANADIAN INSTITUTE OF TECHNOLOGY

MASTER OF SCIENCE

COMPUTER ENGINEERING & INFORMATION TECHNOLOGY

"COMPUTER ENGINEERING AND BIG DATA PROFILE"

www.cit.edu.al

OUR **MASTER** PROGRAMS

Canadian Institute of Technology offers high quality educational programs ranging from Master of Science in Business of Information Technology, Digital Marketing, Business Administration, Finance & Accounting, Computer Engineering & IT and Software Engineering. Designed for students interested in pursuing a career in these fields, you will get a start in the job market, and may gain exemptions from professional qualifications.

You will develop a professional understanding of these programs, applicable to real world jobs.

Canadian Institute of Technology commits on delivering quality education through its highly qualified domestic academic staff with teaching experience abroad as well as international academic staff.

Study with McGraw Hill, one of the biggest educational publishers in the world.

Improve your English skills and increase employment opportunities by gaining access to an international career.

A connected and supportive network.

Teaching process is based on the best international educational practices, empowering graduates with creative, innovative, entrepreneurial skills, and a passion for knowledge.

WHY MASTER OF SCIENCE IN **COMPUTER ENGINEERING & INFORMATION TECHNOLOGY** "COMPUTER ENGINEERING AND BIG DATA PROFILE"

The Master of Science in 'Computer Engineering and Information Technology' with a profile in 'Network and Cybersecurity' is a highly industrially relevant and up-to-date program offered by the Canadian Institute of Technology (CIT). It is designed to equip students with the skills and knowledge needed to become future leaders in the fields of cybersecurity, network engineering, and general computer engineering, making them valuable assets in a wide range of industries.

The course is designed by CIT's academic experts and industry professionals to rigorously prepare students to address the ongoing global shortage of network engineers and cybersecurity specialists. It also equips them with additional skills in database management, programming, and advanced project management. Students embark on this intensive program by studying modules taken from the fields of information engineering, cybersecurity, computer networking, JAVA programming, database design and administration. Industrial practices, including the latest approaches adopted by the industry to design and safeguard enterprise networks, are taught.

The essence of this program lies in understanding how to appreciate the vast flow of information coursing through the Internet and the necessity to protect it. The program addresses this by containing modules on: Cloud Computing for Business, Web Engineering and Advanced Cryptography. Strategically important modules also include: Mobile Computing, wireless communications, interconnection networks for multi-computers, communications security and advanced research methods.

Whichever profession the student finally settles upon, the student must develop a sense and culture of critical thinking and reflection to make the correct, reasonable, cost effective and ethical professional judgement. The program builds these skills through a solid understanding of theoretical methods, principles, tools and an examination of fundamental computer engineering and cybersecurity issues and processes.

To help the student seamlessly step into industry, internship opportunities are offered and built into this graduate program. This enables students to work with real-world problems utilizing emerging technologies and solutions alongside fellow software professionals. Teamwork is highly valued in the industry, and this is encouraged, with a strong emphasis on providing proper attribution and credit to the creators of the work that complete the assignment. Students on this program at CIT are encouraged to form lifelong networks as they are our future industrialists and entrepreneurs.

WHY MASTERS IN
COMPUTER ENGINEERING & INFORMATION TECHNOLOGY
"COMPUTER ENGINEERING AND BIG DATA PROFILE"

In completing this programme, the student will master the analytical bases and science data flow, furthermore develop a competence in JAVA programming and acquire the skills in extracting information from different data sources. Database Management learning will include studying both traditional relational databases and NoSQL databases including web-based sources. Potential students will also gain essential computer engineering practices and understand how to enable reproductive and scalable data analyses as well as investigate the resources needed for the successful completion of a data intensive engineering/scientific/medical research project.

To help the student seamlessly step into industry, internship opportunities are offered and built into this graduate programme. This enables students to work with real-world problems utilising emerging technologies and solutions alongside fellow professionals. Teamwork is critical in industry and this is encouraged whilst taking care to give full attribution and credit to the creators of the work making up the assignment.

People on this programme and our other programmes here at CIT are encouraged to form lifelong networks as they are our future industrialists and entrepreneurs.

TARGET SKILLS

- **Big Data Analysis and Processing:** Develop expertise in analyzing and processing large volumes of data efficiently and accurately.
- **Data Analytics and Visualization:** Gain proficiency in using data analytics techniques and visualizing data to make informed decisions.
- **Database Design and Administration:** Master the design and administration of both traditional relational databases and NoSQL databases, including web-based sources.
- **Java Programming Competence:** Attain a high level of competence in Java programming to build robust and efficient software applications.
- **Information Extraction from Diverse Data Sources:** Acquire skills to extract relevant information from various data sources, ensuring data accuracy and usefulness.
- **Critical Thinking and Professional Judgment:** Develop a sense of critical thinking and ethical professional judgment when handling big data, considering cost-effectiveness and reasonable decision-making.
- **Advanced Project Management:** Learn advanced project management techniques to successfully plan, execute, and complete projects in the field of computer engineering and big data.
- **Computer Networking Principles:** Understand the fundamental principles of computer networking to ensure efficient communication and data transfer.
- **Data Mining and Pattern Recognition:** Explore advanced data mining techniques and pattern recognition methods to identify meaningful patterns and trends in data.
- **Understanding Industrial Practices:** Gain insights into the latest industrial approaches for analyzing, programming, and visualizing big data, focusing on real-world applications.
- **Reproducible and Scalable Data Analyses:** Learn how to enable reproducible and scalable data analyses for engineering, scientific, and medical research projects, considering resource efficiency and project success.

TYPICAL CAREER OPPORTUNITIES

- Big Data Engineer
- Database Manager
- Data Scientist
- Data Analyst Professional/Officer
- Web Data Professional
- Web Data Analyst
- External Consultant
- Actuary (Statistician dealing with Risk)
- Operational Researcher
- Information Specialist
- Business Information Systems (BIS)
- Software Developer
- Data Architect
- Business Intelligence Analyst
- Database Developer
- Information Professional
- Information Analyst
- Marketing Data Analyst/Professional
- Systems Developer
- Researcher in Fintech
- E-commerce Developer
- Management Systems
- Defence and Aerospace
- Healthcare Informatics

MASTER OF SCIENCE IN **COMPUTER ENGINEERING & INFORMATION TECHNOLOGY**

"Computer Engineering and Big Data" Profile

First Year

FIRST SEMESTER COURSES

- Advanced Java Programming
- User Interface Design
- Advanced Research Methods
- Advanced Project Management
- Database Design and Administration

SECOND SEMESTER COURSES

- Pattern Recognition
- Advanced Data Mining
- Network Programming
- Foundations of Data Analytics and Data Science
- Elective Subject

Elective one of:
- Software Engineering for Data
- Data Visualization
- Discrete Event and Systems Simulations Methodology

Second Year

THIRD SEMESTER COURSES

- Web Engineering
- Data Analysis I: Statistics
- Advanced Digital Design with Verilog and FPGA
- Data Analysis II: Machine Learning

FOURTH SEMESTER COURSES

- Internship
- Thesis

HOW TO APPLY

Master of Science Program (National Students)

The first step to admission in a Master's program at CIT is to complete the application form, which is available at **www.cit.edu.al**. An Admissions Officer will then contact you to provide further details about the pre-registration process and the required documents for this stage.

Admission Criteria

The Canadian Institute of Technology requires all candidates to fill out an application form in order to be accepted in one of the Master of Science programs. This form can be filled out on-line or in the premises of the Admission Office.

Students will be eligible for admission to one of the Master's programs if they meet the following criteria:

- Have successfully completed their studies in the Republic of Albania and obtained the relevant diploma, from a first study cycle "Bachelor" program or an integrated second study cycle program, accredited at the moment of the student graduation;
- Have an average GPA, preferably, no lower than 7.5;
- Demonstrate English language proficiency at the B1 level or higher.

SCAN ME

Applications are open throughout the year, and registration takes place during September and October.

Master of Science Program (International Students)

Admission Criteria

The Canadian Institute of Technology requires all international candidates to fill out an application form in order to be accepted in one of the Master of Science programs. An Admissions Officer will then contact you to provide further details about the pre-registration process and the required documents for this stage.

International students will be eligible for admission to one of the Master's programs if they meet the following criteria:

- Have successfully completed their studies and obtained the relevant 'Bachelor' program diploma from an accredited program at the time of their graduation;
- Have an average GPA, preferably, no lower than 7.5;
- Demonstrate English language proficiency at the B1 level or higher.

SCAN ME

Applications are open throughout the year, and registration takes place during September and October.

International students are required to apply to the Albanian Education Service Center (QSHA) for the recognition of their diplomas.

CIT
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OPEN YOUR **DOOR** TO THE **WORLD**

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