Graduate Master of Science in Computer Science



"I didn't know what to expect as an online student...but my experience was truly amazing at Ottawa. Balancing a full-time career and family life while pursuing my education required a program that worked with my busy schedule. I was very upfront and honest with my advisor about what I needed, and she and my professors were there to guide me every step of the way."

– Ebonie Landry, OU Alumni

At Ottawa University

The Master of Science in Computer Science (MSCS) program equips students with the necessary knowledge and skills to thrive in careers as software developers, software engineers, data analysts, cybersecurity specialists, machine learning engineers, artificial intelligence specialists, and more. The MSCS degree is highly valued in the job market and offers graduates opportunities for career growth. Ottawa University Information Science and Technology Institute (ISTI) is dedicated to creating new enrollment opportunities by training highly skilled computer science and business-centric professionals to lead and manage computer systems in organizations of all types.

Education and Qualifications

The Master of Science in Computer Science (MSCS) program is designed for students seeking computer science and technology positions. This degree offers numerous benefitsand prepares students for diverse career options that are currently in high demand (Software Engineer, Data Scientist, Computer Network Architect, Cybersecurity Analyst, etc.).

Qualified candidates must hold a Bachelor's degree in computer science, software engineering, or other related field (ie. physics, mathematics, electrical engineering) OR a Bachelor's degree in an unrelated field and 1 to 2 years of professional work experience in an IT-related field.

Full Degree Courses Here

Ottawa University

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Major Course Courses

CST 7080 - Cloud System Design (3)
This course provides students with the knowledge and skills needed to design and implement cloud-based solutions for complex business systems. Topics covered include cloud deployment models, virtualization, containerization, and cloud architecture.

CST 7090 - Advanced Network Design and Deployment (3)
This course focuses on advanced topics such as network architecture, design, security, and management. Students will learn about the latest trends and best practices in network design and deployment, including emerging technologies, software-defined networking, cloud computing, and virtualization. Through hands-on assignments and projects, students will gain practical experience in designing and deploying enterprise-level networks, configuring network security and managing network operations.

Full Course Description Here

CST 7100 - Scalable Computer Architecture (3)
This course thoroughly studies computer architecture principles and techniques for building scalable and high-performance computing systems. The course covers various topics such as parallelism, memory hierarchy, interconnects, and techniques for designing scalable computer systems that can handle large-scalable computing, such as big data analytics, machine learning, and cloud computing.

CST 7300 - Advanced Systems Analysis and Design (3)
Students will delve into the complexities of the systems to development life cycle, mastering advanced methodologies and techniques to design, analyze and implement complex information systems.

Full Course Description Here

CST 7500 - IT/IS Project Management (3)
Drawing from established project management frameworks such as Agile and Waterfall, the course emphasizes a holistic approach, covering key areas, including scope definition, timeline schedule, resource allocation, risk assessment, and stakeholder communication.

Full Course Description Here

CST 7600 - Ethics in Computer Science (3)
This course explores ethical principles, legal frameworks, and social responsibilities in computer science. Students will examine the impact of technology on society, evaluate the ethical implications of emerging technologies, and learn to apply decision-making frameworks to address ethical challenges. Topics include data privacy, artificial intelligence ethics, bias in algorithms, intellectual property, and professional conduct. The course emphasizes critical thinking and responsible computing practices.

CST 7010 - Advanced Computer Science Topics (3)
This course delves into cutting-edge topics and emerging trends in computer science, including artificial intelligence, machine learning, computer vision, natural language processing, big data, and cloud computing. Students will gain an understanding of advanced algorithms, techniques for solving complex computational problems, and modern tools and technologies used in the industry. The course also covers the critical analysis of research papers and the practical application of knowledge to real-world problems.

AI and Machine Learning Specialization

CST 7020 - Programming Language Logic (3)

CST 7030 - Analysis of Algorithms and Computation (3)

CST 7040 - Fundamentals of AI and Machine Learning (3)

CST 7050 - Neural Machine Learning and Data Mining (3)

CST 7060 - Data Science for Business Intelligence (3)

Cybersecurity Specialization

CST 7070 - Information Insurance and Cybersecurity (3)

CST 7110 - Cyber Forensics and Incident Response (3)

CST 7203 - Cybersecurity Risk Management and Assessment (3)

CST 7220 - Cybersecurity for the Internet of Things, Artificial Intelligence, Cryptocurrency (3)

CST 7240 - Cloud Security: Advanced Concepts and Strategies (3)

Note: 12 terms of Executive Practicum courses equivalent to 6 hours

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Program requirements reflected herein are current at time of printing but are subject to change at the discretion of the university. Consult the catalog for any curriculum changes and additional requirements. Some required courses may be met through transfer credit as determined by the advisor in consultation with the registrar. www.ottawa.edu/coursecatalog

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