

# CYBER TECHNOLOGY, MS

**Dr. Shakil Akhtar, Program Coordinator**  
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## Interested Applicants

Visit the Department of Computer Science and Information Technology webpage (<https://www.clayton.edu/cstem/csit/programs/>).

You may also contact the department by email (CSIT@clayton.edu) or by phone at: (678) 466-4401.

To apply, visit the Clayton State (<https://www.clayton.edu/graduate/>) **University School of Graduate Studies webpage** (<https://www.clayton.edu/graduate/>). (<https://www.clayton.edu/graduate/>)

## Mission

The **Master of Science in Cyber Technology (MSCT)** is designed to enable both traditional students and working adults to pursue graduate education in the field of cyber technology. Individuals will be equipped with knowledge and skills needed to advance their career or perform a mid-career transition into cyber technology areas.

## Goals

The goal of the **Master of Science in Cyber Technology (MSCT)** program is to prepare students to work and study independently and collaboratively, to pursue academic career or professional career in education and research, industry, business, or government.

The program offers three curricular tracks: **Research (Thesis) Track**, **Applied (Project) Track**, and **Course-only Track**. The research track is designed for students interested in a career in cybersecurity research, possibly continuing toward a doctoral degree. The applied project track is designed to maximize the acquisition of advanced practical skills and a corresponding professional placement in industry, business, or government. The Course Only track is designed for students who have project practices but need knowledge and skills to advance or pursue cybersecurity careers.

Within each track, there are two areas of concentration from which students may choose: the **Operation and Security Management Concentration** and the **Information Security Concentration**. To earn the Master of Science in Cyber Technology degree, a student must complete at least 30 credit hours including CyberTech core courses, courses within the chosen area of concentration, a project or thesis or an additional graduate course, and a research techniques course. Upon completion of the program, graduates will be awarded the MSCT degree.

## Program Outcomes

**Graduates of this program will be able to:**

- Secure data using current software and hardware tools, and respond to threats that occur over the internet.
- Design and implement risk analysis, security policies, and damage assessment.
- Plan, implement, and audit operating systems' security in a networked, multi-platform and cross platform environment.
- Provide contingency operations like administrative planning for incident response, disaster recovery, or business continuity planning within information security.

## General Requirements for Program Admission

To be considered for MSCT admission, applicants must submit an application for admission to Graduate Studies at CSU. Admission to the MSCT program requires an earned baccalaureate degree from an accredited college or university. In addition to the general requirements as outlined in this catalog, applicants must have:

- Completed online application to the School of Graduate Studies
- Bachelor's degree with a minimum 2.5 GPA of undergraduate study from an accredited college or university
- Resume
- International students whose native language is not English are required to submit English Language Proficiency through one of the following options: TOEFL (minimum score of 78 total on the internet-based TOEFL), IELTS (minimum score of 6 total), Duolingo English Test (Minimum score of 100), or successful completion of an approved University System of Georgia (USG) intensive ESL program.
- If an applicant has completed any coursework, degree, or degrees from institutions outside of the United States, he or she must utilize a credential evaluation service. The School of Graduate Studies accepts an official course-by-course evaluation with a GPA that is prepared by either Josef Silney and Associates or World Education Services.

## Deadlines

Admit Term	Final Recommended Deadline
Fall	July 15
Spring	November 15
Summer	April 25

The final deadlines for Applications and supporting documents for **international graduate** students are:

Admit Term	Final Recommended Deadline
Fall	May 1
Spring	September 1
Summer	February 1

## Program Requirements

The program offers three (3) program tracks: the Applied (Project) Track, the Research (Thesis) Track and the Course Only Track.<sup>1,2</sup>

### Applied (Project) Track<sup>3</sup>

Students who select the Applied (Project) track must successfully complete a total of 30 credit hours.

- Four (4) Master of Science Cyber Technology core courses: 12 credit hours<sup>2</sup>
- Four (4) concentration courses: 12 credit hours<sup>4</sup>
- CSCI 6574 Research Techniques: 3 credit hours
- CSCI 6599 Special Project: 3 credit hours

### Research (Thesis) Track<sup>3</sup>

Students who select the Research track must successfully complete a total of 30 credit hours.

- Four (4) Master of Science Cyber Technology courses: 12 credit hours<sup>2</sup>
- Four (4) concentration courses: 12 credit hours<sup>4</sup>
- CSCI 6574 Research Techniques: 3 credit hours
- CSCI 6600 Thesis: 3 credit hours

### Course Only Track<sup>3</sup>

Students who select the Course Only track must successfully complete a total of 30 credit hours.

- Four (4) Master of Science Cyber Technology courses: 12 credit hours
- Four (4) concentration courses: 12 credit hours
- CSCI 6574 Research Techniques: 3 credit hours
- One CSIT graduate course: 3 credit hours

## English Proficiency Requirement

Those applicants whose native language is not English or whose language of college instruction was not English are required to submit English Language proficiency scores.

- Test of English as a Foreign Language (TOEFL) (<https://www.ets.org/toefl/>): 78 total on the internet-based TOEFL (ibT) or 550+ on the paper-based TOEFL
- International English Language Testing System (IELTS) (<https://www.ielts.org/en-us/>): Minimum scores of 6 total
- Duolingo English Test (<http://englishtest.duolingo.com/applicants/>): Minimum score of 100

Applicants whose language of instruction was English should have the Registrar of their home institution submit a letter to Graduate Admissions attesting/certifying that the language of instruction for the baccalaureate degree was English. If this documentation is unavailable, applicants must submit the official acceptable scores on the TOEFL, IELTS or Duolingo.

## Program Requirements<sup>1</sup>

Code	Title	Credit Hours
<b>Required MSCT Core Courses<sup>2</sup></b>		<b>12</b>
CSCI 5306	Computer & Networks Security	3
CSCI 5317	Operating Systems Administration and Security	3
CSCI 5601	Software Security	3
CSCI 5701	Introduction to Cybersecurity	3
<b>Concentration Requirements<sup>4</sup></b>		<b>18</b>
Choose one concentration from the following:		
Information Security Concentration		
Operation & Security Management Concentration		
<b>Total Credit Hours</b>		<b>30</b>

### Information Security concentration (Applied)<sup>3</sup>

Code	Title	Credit Hours
<b>MSCT Required Core Courses<sup>2</sup></b>		<b>12</b>
<b>Information Security Concentration (Applied) Required Courses<sup>3</sup></b>		<b>18</b>
CSCI 6574	Research Techniques	

CSCI 6599	Special Project	
Choose 4 courses (12 credit hours) from the following:		
CSCI 5501	Secure Network Modeling and Simulation	
CSCI 6010	Digital Forensics and Incident Response	
CSCI 6012	Information Risk Management	
CSCI 6092	Advanced Topics in Cyber Technology	
CSCI 6306	Cryptographic Techniques	
CSCI 6310	Data Security and Analytics	
<b>Total Credit Hours</b>		<b>30</b>

### Information Security concentration (Research)

Code	Title	Credit Hours
<b>MSCT Required Core Courses<sup>2</sup></b>		<b>12</b>
<b>Information Security Concentration (Research) Required Courses<sup>3</sup></b>		<b>18</b>
CSCI 6574	Research Techniques	
CSCI 6600	Thesis	
Choose 4 courses (12 credit hours) from the following:		
CSCI 5501	Secure Network Modeling and Simulation	
CSCI 6010	Digital Forensics and Incident Response	
CSCI 6012	Information Risk Management	
CSCI 6092	Advanced Topics in Cyber Technology	
CSCI 6306	Cryptographic Techniques	
CSCI 6310	Data Security and Analytics	
<b>Total Credit Hours</b>		<b>30</b>

### Operations & Security Management Concentration (Applied)<sup>3</sup>

Code	Title	Credit Hours
<b>Required MSCT Core Courses<sup>2</sup></b>		<b>12</b>
<b>Operations &amp; Security Management Concentration (Applied) Required Courses<sup>4</sup></b>		<b>18</b>
CSCI 6574	Research Techniques	
CSCI 6599	Special Project	
Choose 4 courses (12 credit hours) from the following:		
CSCI 5502	Secure Networks and Communications Protocols	
CSCI 6010	Digital Forensics and Incident Response	
CSCI 6092	Advanced Topics in Cyber Technology	
CSCI 6134	Enterprise Security Management	
CSCI 6208	Disaster Recovery Planning	
CSCI 6308	Cloud Computing	
<b>Total Credit Hours</b>		<b>30</b>

### Operation & Security Management Concentration (research)<sup>3</sup>

Code	Title	Credit Hours
<b>MSCT Required Core Courses<sup>2</sup></b>		<b>12</b>
<b>Operations &amp; Security Management Concentration (Research) Required Courses<sup>4</sup></b>		<b>18</b>
CSCI 6574	Research Techniques	
CSCI 6600	Thesis	

Choose 4 courses (12 credit hours) from the following:

CSCI 5502	Secure Networks and Communications Protocols
CSCI 6010	Digital Forensics and Incident Response
CSCI 6092	Advanced Topics in Cyber Technology
CSCI 6134	Enterprise Security Management
CSCI 6208	Disaster Recovery Planning
CSCI 6308	Cloud Computing

**Total Credit Hours** 30

## Operations & Security Management Concentration (Course Only)<sup>3</sup>

Code	Title	Credit Hours
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**MSCT Required Core Courses<sup>2</sup>** 12

**Operations & Security Management Concentration (Course Only) Required Courses** 18

CSCI 6574	Research Techniques
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One CSIT graduate course (3 credit hours)

Choose 4 courses (12 credit hours) from the following:

CSCI 5502	Secure Networks and Communications Protocols
CSCI 6010	Digital Forensics and Incident Response
CSCI 6092	Advanced Topics in Cyber Technology
CSCI 6134	Enterprise Security Management
CSCI 6208	Disaster Recovery Planning
CSCI 6308	Cloud Computing

**Total Credit Hours** 30

## Information Security concentration (course only)

Code	Title	Credit Hours
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**MSCT Required Core Courses<sup>2</sup>** 12

**Information Security Concentration (Course Only) Required Courses<sup>3</sup>** 18

CSCI 6574	Research Techniques
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One CSIT graduate course (3 credit hours)

Choose 4 courses (12 credit hours) from the following:

CSCI 5501	Secure Network Modeling and Simulation
CSCI 6010	Digital Forensics and Incident Response
CSCI 6012	Information Risk Management
CSCI 6092	Advanced Topics in Cyber Technology
CSCI 6306	Cryptographic Techniques
CSCI 6310	Data Security and Analytics

**Total Credit Hours** 30

<sup>1</sup> Each student must complete 30 credit hours of MSCT courses with a minimum grade point average of 3.0 to earn the degree.

<sup>2</sup> All students must take the four (4) MSCT core courses totaling 12 credit hours. A minimum grade of C is required for the four core courses.

<sup>3</sup> Students must select one of three program tracks, the Applied (Project) Track, the Research (Thesis) Track, or the Course Only Track.

- Students selecting the Applied (Project) Track must complete CSCI 6574 (<https://clayton-preview.courseleaf.com/search/?P=CSCI%206574>) Research Techniques(3 credit hours) and CSCI 6599 (<https://clayton-preview.courseleaf.com/search/?P=CSCI%206599>) Special Project (3 credit hours).

- Students selecting the Research (Thesis) Track must complete CSCI 6574 (<https://clayton-preview.courseleaf.com/search/?P=CSCI%206574>) Research Techniques (3 credit hours) and CSCI 6600 (<https://clayton-preview.courseleaf.com/search/?P=CSCI%206600>) Thesis (3 credit hours).

- Students selecting the Course Only Track must complete CSCI 6574 Research Techniques (3 credit hours) and an additional CSIT graduate course (3 credit hours).

<sup>4</sup> Concentration Requirements: Student must choose one of the two concentrations and take 4 courses (12 credit hours) within one of the concentration options.

<sup>5</sup> Students can transfer, at most, 6 credit hours of non-core courses from other college or university.

## Faculty

Shakil Akhtar  
Xiangdong An  
Shuju Bai  
Byron Jeff  
Ebrahim Khosravi  
Ken Nguyen  
Jufeng Qu  
Muhammad Rahman