

# CYBER SECURITY, MASTER OF SCIENCE

College of Natural & Behavioral Sciences  
Department of Computer Science

## Program Description

The Master of Science in Cyber Security program is designed to provide professional preparation for private, public, and non-profit sector professionals in the field of cyber security. The curriculum delivered in an accelerated 18-month cohort model requires the completion of six (6) core and four (4) elective courses. The program culminates with a cyber-security research project supervised by a faculty member. The Master of Science in Cyber Security program aims to prepare students for professional careers in cyber security. The program aims to provide a learning experience for the students to develop technical skills in protecting IT infrastructures, operating systems, and networks from intentional and unintentional information security breaches. The curriculum learning outcomes are designed for the acquisition of advanced expertise in the area of cyber security, including the protection of computers, networks, programs from unauthorized access, alteration, or damage of data. The program's strengths include a robust academic curriculum, high-quality expert instructors, accelerated format (18-month model); and affordability. The Master of Science in Cyber Security will position its graduates to become leaders in the field of cyber security. Classes are scheduled to accommodate late afternoon, evening, and weekend classes.

## Admission Procedures

The following materials are required for admission review by the submission deadline:

Please note that the cut-off date for Admission to the Fall Term is July 1, with the complete package of materials (application, transcripts and other required documents) due by August 1. For the Spring Term, the deadline for completed applications is November 15, and the deadline for materials is December 1. If you do not meet these deadlines, you will need to re-apply with a new application for the next term.

- Apply via Cal State Apply: <https://www.calstate.edu/apply> (<https://www.calstate.edu/apply/>)
- Contact your previous college(s) to request official transcripts. Applicants must provide an official transcript from each post-secondary institution attended (post-baccalaureate coursework included) be sent to the Admissions Office at [admit@csudh.edu](mailto:admit@csudh.edu). If the institution providing the transcript can only mail the transcript, mail it to:

Admissions Office CSU Dominguez Hills  
1000 E. Victoria Street Carson, CA 90747

- Send two letters of support and a Statement of Purpose (why you want to be in the program) for your application to the program coordinator at: [MSCY@csudh.edu](mailto:MSCY@csudh.edu).

## Admission Requirements

The following general requirements must be met to be admitted to the program:

- A bachelor's degree from a regionally accredited college or university
- Good standing at the last institution
- A grade point average (GPA) of at least 2.5 on the last degree completed or at least 2.5 in the last 60 semester (90 quarter) units attempted.
- International Students must provide evidence of one of the following:
  - A minimum score of 80 on the internet-based TOEFL exam (iBT)
  - A minimum score of 213 on the computer-based TOEFL exam
  - A score of 6.5 or higher on the IELTS, or
  - A score of 53 or higher on the Pearson Test of English (PTE) Academic. Depending on the type of undergraduate degree held, the applicants may be admitted with either a classified or conditional admission status.

Who can apply for this graduate program? Minimum requirement:

1. Bachelor's degree with a GPA of 2.5 or higher
2. Full Admission: Bachelor degree in Computer Technology from CSUDH or an equivalent program; or,
3. Conditional Admission: Bachelor degree other than computer technology. Students with no background may need to take some leveling courses before admission to the program.

## Contact Information

Application/Admission Questions:  
[msprogram@csudh.edu](mailto:msprogram@csudh.edu)  
424-205-5270

Academic Questions:  
Mohsen Beheshti  
[mbeheshti@csudh.edu](mailto:mbeheshti@csudh.edu)  
310-243-3398

Computer Science Department (CSC) (Curriculum, Advising, Admission)  
310-243-3398  
[mscy@csudh.edu](mailto:mscy@csudh.edu)  
[csc.csudh.edu \(http://csc.csudh.edu/\)](http://csc.csudh.edu/)

College of International and Extended Education (CIEE)  
(Registration, Payment, Application Process)  
310-243-3741  
<https://www.csudh.edu/ceie/registration/>

## Full Admission

In order to be admitted with a classified status, the applicant must meet all general admission requirements and hold a bachelor's degree in Computer Technology (CT), Information Technology (IT), Computer Science (CS), or a related subject.

## Conditional Admission

The applicants holding bachelor's degrees in fields not related to Computer Science may be considered for conditional admission. Conditionally admitted students may have to fulfill additional requirements before they attain a classified status. These additional requirements, which will be determined by evaluating the applicant's transcripts and work-related experience, include evidence of mastery of the key concepts in the following topic areas:

- Computer Hardware and Tools
- Computer Programming
- Operating System and Networking
- Dynamic Web Programming
- Network Security
- Introduction to Statistics
- Or take the Cyber Security Certificate of Completion at CSUDH: (three 2unit courses)
- IT Fundamentals,
- Network and Hardware, and
- CyberSecurity

## Advancement to Candidacy

Advancement to candidacy recognizes that the student has demonstrated the ability to sustain a level of scholarly competency commensurate with successful completion of degree requirements. Upon advancement to candidacy, the student is clear for the final stages of the graduate program which, in addition to any remaining course work, will include the project. Following are the requirements for Advancement to Candidacy:

1. A minimum of 15 resident units
2. Classified standing
3. An approved Program of Study
4. Successful completion of GVAR
5. A cumulative of 3.0 in all courses taken as a graduate student
6. No grade lower than a "B" in the degree program

## Student Organizations

Contact the departmental office for membership information, or visit the websites:

Association for Computing Machinery (ACM) ACM@csudh.edu  
 Institute of Electrical and Electronics Engineers (IEEE) IEEE@csudh.edu  
 Cyber Security CyberSec@csudh.edu  
 Computing Alliance of Hispanic-Serving Institutions (CAHSI)  
 CAHSI@csudh.edu

## Faculty

Mohsen Beheshti, Department Chair

Jianchao (Jack) Han, Bin Tang, Marek Suchenek, Amlan Chatterjee,  
 Liudong Zuo, Alireza Izaddoost, Ali Jalooli, Sanaz Rahimi Moosavi, Sahar  
 Hooshmand

## Emeriti Faculty

William B. Jones, Kazimierz Kowalski

## Staff

Angelica Tan, Administrative Assistant  
 Ken Leyba, IT Consultant  
 Department Office: NSM A-132, (310) 243-3398 <http://csc.csudh.edu>  
 (<http://csc.csudh.edu/>)

## Requirements

### Admission Requirements

The following general requirements must be met to be admitted to the program:

- A bachelor's degree from a fully accredited institution.
- Good standing at the last institution attended.
- A grade point average (GPA) of at least 2.5 on the last degree completed or at least 2.5 in the last 60 semester (90 quarter) units attempted.
- International Students must provide an evidence of one of the following:
  - A minimum score of 550 on the paper-based TOEFL exam
  - A minimum score of 80 on the internet-based TOEFL exam (iBT)
  - A minimum score of 213 on the computer-based TOEFL exam
  - A score of 6.5 or higher on the IELTS, or
  - A score of 53 or higher on the Pearson Test of English (PTE) Academic

Depending on the type of the undergraduate degree held, the applicants may be admitted with either a classified or conditional admission status.

### Classified Admission

In order to be admitted with a classified status, the applicant must meet all general admission requirements and hold:

- A bachelor's degree in Computer Technology (CT), Information Technology (IT), Computer Science (CS) or a related field.

### Conditional Admission

The applicants holding bachelor's degrees in the fields not related to Computer Science, may be considered for a conditional admission. Conditionally admitted students may have to fulfill additional requirements before they attain a classified status. These additional requirements, which will be determined by evaluating applicant's transcripts and work-related experience, include an evidence of mastery of the key concepts in the following topic areas:

- Computer Hardware and Tools
- Computer Programming
- Operating Systems and Networking
- Dynamic Web Programming
- Network Security
- Introduction to Statistics

These requirements may be met by successful completion of the necessary bridge courses identified by the Program Coordinator or passing of a placement exam.

### Major Requirements (30 units)

Code	Title	Hours
<b>Core Courses</b>		
CYB 501	Foundation of Information Security	3
CYB 528	Foundations of Cyber Forensics	3
CYB 538	Information Security Policy and Procedure	3
CYB 555	Information Assurance and Network Security	3
CYB 584	Software Project Planning and Management	3
CYB 590	Graduate Project	3

<b>Electives</b>		
Select four courses from the following:		12
CYB 529	Advanced Cyber Forensics	
CYB 548	Advanced OS Security	
CYB 551	Data Communications and Computer Networks	
CYB 552	Advanced Hacking Prevention	
CYB 562	Advanced Communication System Security	
CYB 572	Secure Cloud Computing	
<b>Culminating Experience <sup>1</sup></b>		
CYB 590	Graduate Project	3
<b>Total Hours</b>		<b>33</b>

<sup>1</sup> The culminating experience is a student-developed cyber security research project conducted under the supervision of a faculty member.

Students graduating with the MSCY degree will be able to:

- Identify, locate, and interpret cyber security research of cyber threats originating from policies, practices, and products to information systems and the infrastructure.
- Compare and contrast legal, ethical, technical and policy issues in cyber security.
- Evaluate different approaches to vulnerability assessment, risk mitigation, auditing, and information systems certification.
- Design and evaluate information systems in regard to their security and protection of its own data.
- Perform an advanced computer forensics investigation and evaluate system networks.