



 Online

# MASTER OF SCIENCE IN CYBER SECURITY OPERATIONS AND LEADERSHIP



## ABOUT UNIVERSITY OF SAN DIEGO

The University of San Diego, established over 70 years ago, is home to over 9,000 students. Its diverse and vibrant student community comes from 85 countries and 50 states in the USA. We are proud to offer a suite of online programs in engineering and tech to Indian students. With this unique opportunity, you can earn a technical degree from a U.S. without having to leave home and without sacrificing quality.

The institution holds the distinction of being one of the youngest private universities to feature in U.S. News and World Report's top 100 universities in the USA. Moreover, the University has achieved accolades for its online programs. The University has also been ranked #1 for having the most beautiful campus and #22 for providing the best career services by the Princeton Review.



## PROGRAM OVERVIEW

### At a Glance

USD Online’s Master of Science in Cyber Security Operations and Leadership (CSOL) aims to provide a comprehensive overview of cyber security concepts, theories, and topics while developing leadership skills in the cyber security domain and to understand the “big picture” to effectively lead efforts in cyber safety.

The curriculum leads you through the latest technologies needed to confront cybercrime and effectively communicate priorities in order to lead cybersecurity operations. You will graduate with essential skills in cyber law, policy, digital forensics, cryptography, risk management, and cyber intelligence. Every subject reinforces the application of socially responsible, ethical practices in the field and promotes lifelong learning in cyber security, as criminals’ tactics are constantly changing.

The final Capstone subject brings all of the knowledge gained throughout the program into a comprehensive real-world study applicable to the current state of cybersecurity. With this unique blend of tactical knowledge and leadership skills, you may go on to work in both hands-on and leadership positions in cyber security.

 Online

**Program Length:** 20 Months

**Total Credits:** 30-36

### Quick Facts

Students have the opportunity to enroll in any of the three semesters: Spring, Summer, or Fall. Each semester holds two subjects lasting seven weeks each, allowing students to concentrate on one subject at a time.

**Top 100**

Universities in the Country  
U.S. News & World Report

**#2**

Most Beautiful Campus  
Princeton Review

**#54**

Best Value Schools  
Princeton Review





## WHAT WILL YOU LEARN?

This program gives you a competitive edge with knowledge in different areas of cybersecurity to gain expertise in cyber law, digital forensics, cyber intelligence, and risk management. Upon completion of the program, you will:

- Learn to utilize advanced technologies to detect and minimize network risks in organizations, while leading teams to mitigate cyber threats.
- Gain expertise in ethical practices and work with different perspectives within diverse cultural, linguistic, sociopolitical, and technological contexts.
- Work collaboratively across organizations by mastering the specialized content areas of cybersecurity.
- Develop the ability to effectively communicate mission-critical cybersecurity needs to key stakeholders throughout diverse organizations.
- Gain lifelong learning skills that help stay abreast of the dynamic adversarial tactics in the cyber world.



## PROGRAM EXPECTATIONS

As postgraduate students at a top-tier US university, a rigorous curriculum, independent research, critical thinking and a high level of accountability are to be expected out of all of our programs. Students should expect and prepare for the following:

- 15-18 hours per week on average to commit to studying and completing assignments. This may vary by the student's personal background and the content of the weekly syllabus.
- Complete work independently on their schedule supplemented by the resources available in the online classroom.
- Look externally to find supplemental information to help them complete assignments and understand course content.



## WHY CHOOSE USD ONLINE?



### Equivalent Value and Same Curriculum as On-campus Degree

Online graduate students earn the same degree as campus-based students. The online mode provides students with the same industry-driven curriculum and academic rigor as the University of San Diego's on-campus degree programs.



### Cutting Edge Tech-focused Curriculum

Join this opportunity to earn a tech degree from a U.S. university. Our innovative, practical curriculum introduces the latest concepts and trends from the global tech landscape, aligning it with industry requirements.



### Attend Graduation Ceremony on Campus

All online students have the opportunity to attend their graduation ceremony at their own expense. Visit our state-of-the-art, historical California campus and join the excitement and celebrations alongside other USD graduates.



### Advanced Learning Resources

Gain access to a robust digital ecosystem designed to enhance your learning experience. Utilize Canvas for coursework and engage with faculty and peers via Zoom. Collaborate seamlessly with industry-standard tools like Google Suite and Microsoft Office 365.



### USD's Career Center & Handshake

Our Career Development Center is here to guide you through job and internship applications, offering mock interview preparation, resume-building tools, and personalized career advice. As a USD student, you'll also have access to Handshake, a platform designed to connect you directly with top employers and internship opportunities in your field, all with the support of our expert advisors.



### Dedicated Support

Get access to academic advisors, engage with expert faculty for guidance, and receive dedicated assistance to help you stay on track. Our support system ensures that online students receive the same level of mentorship and engagement as on-campus learners.



## WHY STUDY A MASTER OF SCIENCE IN CYBER SECURITY OPERATIONS AND LEADERSHIP?

### Potential Careers

With cybercrime threats continually on the rise, organizations are always looking for leaders who can help mitigate risks and safeguard their valuable data. This is an opportune time to pursue a career in the field. Graduates of our cyber security operations and leadership program can secure jobs as:

- Chief Information Security Officer
- Chief Security Officer
- Chief Risk Officer
- Security Director
- Information Security Analyst
- Penetration Tester

### Industry Insights

**US\$ 15 Billion**

The cyber security market's worth in India in 2023

**US\$ 71.68 Billion**

IT security spending globally in 2022

**INR 1.3 Million+**

The average annual salary of a cyber security professional in India

Sources: Cyberventures.com, Statistica.com, Talent.com

### Where Our Graduates Work



Booz | Allen | Hamilton



Deloitte

Forcepoint



University of San Diego

ONLINE



## ALUMNI BENEFITS AT THE UNIVERSITY OF SAN DIEGO

At the University of San Diego, our commitment to alumni extends well beyond graduation. Explore the following diverse benefits designed to foster continuous connection, active engagement, and unwavering support within the esteemed Torero community.

### ■ Stay Updated with Monthly eNewsletter:

Receive our vibrant monthly eNewsletter, keeping you in the loop with the latest happenings, alumni stories, and upcoming events.

### ■ Connect Anytime with the Torrero Network

Explore our dynamic alumni website, your go-to-hub for staying connected, accessing resources, and discovering opportunities within the USD community.

### ■ Local Torrero Clubs for Community Building:

Build or join local Torrero clubs to connect with alumni in your area, fostering a sense of community and shared Torero pride.

### ■ Networking Made Easy on Alumni Portal:

Engage in meaningful networking within our alumni portal; connecting with fellow alumni to share experiences, insights, and career opportunities.

### ■ Virtual Events for Continued Learning:

Attend our virtual events, including the ongoing personal finance series addressing navigating inflation. Stay informed, inspired, and connected from the comfort of your home.

### ■ Alumni Member Card Upon Graduation:

Upon graduation, sign up to receive your Alumni Member Card, unlocking exclusive privileges and access to various benefits on-campus and local benefits.

### ■ Explore Job Opportunities on Handshake:

Sign up for Handshake, our job listing platform, to explore a myriad of career opportunities tailored for USD alumni.

### ■ T.E.A.M. for Networking and Mentorship:

Join T.E.A.M., our exclusive private social networking site, to find mentors, explore job listings, share expertise, and make valuable connections within the USD community.

### ■ Access Online Library Resources:

Enjoy continued access to certain online library resources, supporting your intellectual curiosity and lifelong learning.

### ■ Discount on Professional Development Courses:

Benefit from a 25% discount on select professional development courses and continuing education courses, enhancing your skills and advancing your career.







## ADMISSIONS AND ELIGIBILITY

### Admissions

Admissions are processed on a rolling basis in August, December and April. To see more information on start dates, please visit our website.

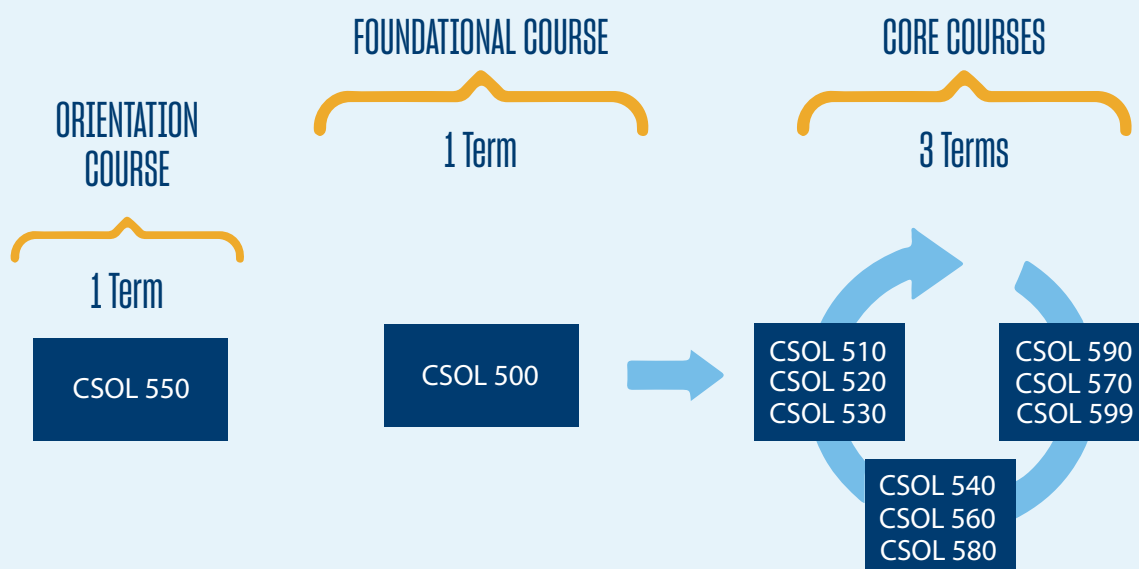
### Eligibility

- Must be a resident of India.
  - Must be proficient in English.
  - Must submit an Aadhaar card or PAN card.
  - Must hold an undergraduate degree:
    - 4-year undergraduate degree holders must have their degree issued from an accredited university (NAAC, UGC or AICTE) and earned a designation of Second Division or higher (45% or above).
    - 3- year undergraduate degree holders must have their degree issued from a NAAC accredited university with a letter grade of A or higher and earned a designation of First Division (60% or above).
  - **Proof of English proficiency if necessary\***
    - \*Applicants are required to provide evidence of English language proficiency to be considered for admission and can prove eligibility as follows:
      - Successful completion of an undergraduate degree with the medium of instruction in English. Evidence must be provided on the marksheet/transcript or student must provide a medium of instruction letter from the university.
- OR
- If the medium of instruction for the undergraduate degree is not English, student must submit evidence of completing an approved English language proficiency test. Score requirements listed below:

TEST NAME	SCORE REQUIRED
IELTS Academic	7.0
TOEFL iBT	83
Duolingo English Test	120



## CURRICULUM



## ORIENTATION COURSE

### CSOL 550 - New Student Orientation

Besides introducing students to the University of San Diego, the orientation course provides vital information about the CSOL program and all the technologies they will learn as part of the program.

During the course, students will learn to navigate the learning environment and successfully locate helpful resources. Students can use this course as a reference tool throughout the program tenure.

## FOUNDATIONAL COURSE

### CSOL 500: Foundations of CyberSecurity

This course will delve into concepts and tools essential to the cyber security professional and provide a review of the various types of cyber security techniques. The students will explore the evolution of cyber security as well as future trends while identifying the roles leaders can play in propagating cyber security in organizations.

Moreover, the course will give a solid head start for the program by explaining the "Business of Cyber" as a cyber security professional. The students will learn not only different types of cyber security attacks and the concept of threat actors and threat vectors but also the diverse roles of a cyber-professional and the fundamentals of designing a cyber security program.

## CORE COURSES

### CSOL 510: Applied Cryptography

This course introduces students to applied cryptographic theory and its practical applications in supporting information security endeavors.

It will revolve around discussions rooted in the open literature closely aligned with advanced military-grade defenses and multi-level security systems.

### CSOL 520: Enterprise Security Architecture

The prime aim of this course is to make students understand the significance of architectural and network security at the organizational level. The course will use Security architecture frameworks to examine enterprise security architectures. Students will be able to identify threats to today's networks and analyze appropriate security tools to safeguard these networks.

The course also involves evaluating the complexities of securing new types of networks, such as cloud configurations and the Internet of Things.



## CSOL 530: Governance and Risk in Cybersecurity

This course will delve into the concepts of risk governance, the processes to follow, compliance regulation, and the security controls to implement for specific cybersecurity environments. The course acknowledges their geopolitical dimensions with cyberattacks growing increasingly aggressive, organized, well-funded, and sophisticated.

Successful attacks on both public and private sector information systems can disrupt organizational assets, individuals; and the nation by compromising information's confidentiality, integrity, or availability. Such incidents pose significant harm to national and economic security interests.

## CSOL 540: CyberSecurity Law and Policy

The course provides students with a solid foundational background and an understanding of cyber security and privacy's core concepts and principles. It includes the history of cybercrime and covers fields related to litigation and enforcement, legal considerations, policy frameworks, compliance measures, consumer data privacy, big data, EU data protection regulations, and HIPAA privacy and security protocols.

## CSOL 560: Secure Software Design and Development

The course provides a deep understanding of the principles of designing and developing secure software essential for enhancing cyber security. It will assess conventional software development models, emphasizing the importance of strategizing for security prior to starting development.

Students will learn to plan for security requirements, focusing on mapping and planning for potential vulnerabilities. The course guides students through the steps of executing an efficient development process; leading to implementation, as well as how to review software review and test software.

## CSOL 580: Cyber Threat Intelligence

This course will explain comprehensively how information superiority and information dominance is the key to influencing operations associated with establishing and maintaining cyber security.



The diverse topics include an overview of contemporary and historical intelligence efforts and how those processes in various domains (human, electronic, digital) apply to cyber operations and security. The course explicitly delves into exploiting "big data" and multiformat information collections (text, video, structured/unstructured) to support cyber situation awareness. It will cover a comparison of modern and classic data collection methods and Intelligence examples from current events.

### CSOL 590: Cyber Incident Response and Computer Network Forensics

Students will learn about the basic principles, general practice, and application of incident response, which also includes an overview of advanced topics like digital and network forensics. It will clearly define and demonstrate what constitutes an incident, what is meant by the incident response, the attack lifecycle, and the goals of the incident response.

The course will explain at length the building of an incident response team, the steps involved, and ways to prepare for incident response. Students will comprehend the procedures for identifying and classifying an incident, gathering and analyzing data, and corrective action. Moreover, the course will allow students to understand the practice of digital forensics, specifically highlighting niches like computer, mobile, network, and database forensics.

### CSOL 570: Fundamentals of Blue Team Operations

Protecting an enterprise involves more than just equipment, applications, and security processes. It ultimately requires intervention and action by the Blue Team. A deep understanding and execution of Blue Team actions are pivotal for an effective cyber security program, whether as a team or in a position with additional responsibilities.

The Blue Team's operations include core concepts like "Defending the Castle" by threat landscape awareness and environment establishing a scenario of "normal" vs. "abnormal" for your environment, understanding Threat Hunting tools and techniques (including intel and open-source research), as well as the components of some of the more significant threats an organization faces, including lateral movement, malware, ransomware, and Command & Control. Moreover, the course will also delve into introducing the relationships between the Blue Team and the related White, Red, and Purple Teams.



## CSOL 599: Capstone: Real-World CyberSecurity Case Study

The program culminates with a Capstone project wherein students demonstrate the specialized knowledge, principles, and strategies learned throughout the program by critically assessing a real-world cybersecurity problem. The final project is centered on a case study relating to a current cyber security issue, trend, or event.

UNIVERSITY ACCREDITATION

**WASC**

**Senior College and  
University Commission**

DEGREE CERTIFICATE

*University of San Diego*

To all to whom these Letters shall come, Greetings  
The Trustees of the University on the recommendation of the Faculty  
and by virtue of the Authority in Them vested have conferred on

**SAMPLE STUDENT**

the Degree of

**Master of Science**

**Cyber Security Operations and Leadership**

with all the Rights, Privileges and Honors thereunto appertaining.

Given at San Diego, in the State of California, this thirtieth day of June,  
in the Year of our Lord, two thousand and twenty-three.

*Janet Han*  
President



*David F. Baker*  
Vice President and Protost

\* USD's degree programs are validated by the U.S. Regional Accrediting body (WASC) and recognized in the U.S. by the U.S. Department of Education. These degree programs do not have official recognition by Ministries of Education outside the United States.





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