

Cybersecurity, Minor

Cybersecurity is a multidisciplinary field that affects almost every profession. The cybersecurity minor allows students from any major to realize the implications cybersecurity may have on their major field of study, while also empowering them to address cybersecurity challenges with expertise that stems from many disciplines.

The minor provides a solid foundation through required courses that build on each other and are accessible to all majors. The elective course work allows a student maximum flexibility in either diving deeper into related topics in one's major or navigating further the breadth of the cybersecurity domain. Elective courses can be drawn from foreign languages of critical importance, English writing, political and social sciences, humanities, communication, math, natural sciences, health sciences, computer science, engineering, and business.

One option for the elective course work is designed for majors outside computer science and engineering who are interested in pursuing a cybersecurity master's upon graduation, such as the specialization in Information Assurance and Cyber Defense (IACD) of the master's in Computer and Information Science (CIS) of Marquette University.

The Interdisciplinary Minor in Cybersecurity consists of four required courses (12-13 credit hours) and two additional elective courses (6-8 credit hours), for a total of 18-21 credit hours, depending on the courses selected. Two options for the completing the elective credits are available. Option 2 provides the necessary foundation for a student to later apply for the Masters in Computer and Information Science (CIS) after completing an undergraduate degree outside of computer science, data science, or computer engineering. This option is not available to computer science, data science, or computer engineering majors.

Code	Title	Hours
Required Courses: (12-13 credits)		
COSC 1010	Introduction to Software Development	3-4
or CEEN 1210	Introduction to Computing, Analysis, Design and Communication	
or EECE 1610	Introduction to Computer Programming	
or GEEN 1210	Engineering Discovery 2	
or INSY 3001	Introduction to Information Systems	
COSC 2930 Topic: Data Science for Cybersecurity		3
COSC 1360	Introduction to Cybersecurity	3
COSC 3840	Ethical Hacking	3
Option 1 or Option 2 Electives (6-8 credits)		6-8
Option 1 - General Electives: choose a total of two courses from the following categories:		
Science, Math and Engineering: A total of two course may be chosen		
CHEM 4230	Forensic Chemistry	
CHEM 4430	Introduction to Quantum Chemistry	
COSC 4300	Network Design and Security	
COSC 4360	Software and System Security	
MATH 4320	Theory of Numbers	
MEEN 4420	Failure Analysis	
MLSC 2050	Forensic Science	
PHYS 4012	Quantum Mechanics	
Critical Foreign Language: a total of two courses may be chosen		
ARBC 1001	Elementary Arabic 1	
ARBC 1002	Elementary Arabic 2	
ARBC 2001	Intermediate Arabic 1	
ARBC 2002	Intermediate Arabic 2	
ARBC 3001	Grammar Review and Skills Development	
ARBC 3002	Spoken Arabic	
ARBC 3705	Arabic for Politics and Diplomacy	
CHNS 1001	Elementary Chinese 1	
CHNS 1002	Elementary Chinese 2	
CHNS 2001	Intermediate Chinese 1	
CHNS 2002	Intermediate Chinese 2	
CHNS 3700	Chinese Business Culture	

Writing: one course may be chosen

DGMD 4345	Advanced Scriptwriting
ENGL 3210	Writing Practices and Processes
ENGL 3220	Writing for Workplaces
ENGL 3221	Technical Writing
ENGL 3222	Writing for Health and Medicine
ENGL 3240	Introduction to Creative Writing
ENGL 3241	Crafting the Short Story
ENGL 3242	Writing Science Fiction and Fantasy
ENGL 4120	Anatomy of English
ENGL 4250	Creative Writing: Fiction
ENGL 4260	Creative Writing: Poetry
ENGL 4270	Creative Writing: Nonfiction
ENGL 4954	Seminar in Creative Writing
JOUR 2100	Multimedia News Storytelling
JOUR 4150	Investigative Reporting
JOUR 4160	Feature and Freelance Writing
JOUR 4360	Freelance Writing
THAR 4600	Playwriting

Business and Communication: one course may be chosen

ADPR 4600	International Advertising and Public Relations
CCOM 4700	Corporate Advocacy
CMST 3300	Persuasion
CMST 4150	Communication and Conflict
CMST 4250	Leadership and Communication
CMST 4500	Health Communication
ECON 4040	International Economics
ECON 4046	International Trade
ECON 4080	Money, Banking and Monetary Policy
ENTP 4041	International Entrepreneurial Sustainability
FINA 4040	International Finance
INBU 4141	International Business Strategy
INSY 4054	Emerging Technologies
INSY 4056	Information Systems Governance
INSY 4156	Privacy and Security
MANA 3034	Negotiation
MANA 4040	International Management
MANA 4045	Globalization: Issues, Opportunities and Challenges
OSCM 3001	Operations and Supply Chain Management
OSCM 4005	Digital Supply Chain Technologies
OSCM 4010	Manufacturing, Planning and Control
OSCM 4020	Quality and Process Management
OSCM 4035	Supply Chain Sustainability & Risk Management
OSCM 4040	Global Logistics Management
OSCM 4045	Globalization and Global Operations
OSCM 4065	Artificial Intelligence in Supply Chain
PURE 3850	Crisis Communication and Reputation Management

Health and Nursing: one course may be chosen

ECON 4022	Economics of Healthcare and Health Policy
NURS 4000	Quality and Safety in Nursing
NURS 4800	Leadership in Professional Nursing Practice - Theory

Humanities, Political and Social Sciences: one course may be chosen

CRLS 2800	Criminal Investigation
CRLS 3700	Evidence
CRLS 4400	Criminal Law and Procedure
HIST 3118	American Military History
HIST 3455	Middle East
HIST 4555	Modern China
MISL 1800	American Crucible: The Military and the Development of the United States
NASC 2185	Leadership and Management
NASC 3161	Evolution of the Art of War
PHIL 4750	Philosophy of Law
POSC 4376	American National Security Policy
POSC 4511	Russian and Post-Soviet Politics
POSC 4521	Chinese Politics
POSC 4541	Latin American Politics
POSC 4601	International Law
POSC 4611	International Organizations
POSC 4631	World Conflict and Security
POSC 4636	Terrorism
POSC 4731	International Politics of Asia
PSYC 4230	Industrial-Organizational Psychology
PSYC 4330	Human Factors Engineering

Option 2 - Bridge to Masters (7 credits)

COSC 1020	Object-Oriented Software Design
COSC 2100	Data Structures

Total Credit Hours:

18-21

University Policies

- Academic Advising (<https://bulletin.marquette.edu/policies/academic-advising/>)
- Academic Censure - Undergraduate (<https://bulletin.marquette.edu/policies/academic-censure/undergraduate/>)
- Academic Integrity (<https://bulletin.marquette.edu/policies/academic-integrity/>)
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- Grading System - Undergraduate and Health Science Professional (<https://bulletin.marquette.edu/policies/grading-system/undergraduate-healthscienceprofessional/>)

- Graduation - Undergraduate (<https://bulletin.marquette.edu/policies/graduation/undergraduate/>)
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- Transfer Course Credit - Undergraduate (<https://bulletin.marquette.edu/policies/transfer-course-credit-policy/undergraduate/>)
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College of Arts and Sciences Policies

- Absences from Final Examinations (<https://bulletin.marquette.edu/arts-sciences/policies/absences-final-examinations/>)
- Academic Dismissal/Probation/Academic Alert (CAA) (<https://bulletin.marquette.edu/arts-sciences/policies/dismissal-probation-alert/>)
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