


# MASTER OF SCIENCE IN CYBERSECURITY MANAGEMENT

The  icon appears in the title of traditional courses that are also available as a set of module courses.

## Description and Outcomes

The Master of Science in Cybersecurity Management will prepare graduates for leadership roles directing and protecting critical information infrastructures. You will learn to develop, implement, evaluate, and update the cybersecurity policies and practices that allow an organization to effectively respond to the dynamic cybersecurity landscape. Graduates will be adept in the management of information continuity, asset classification and control, compliance management, and the secure administration of IT infrastructure, as well as incident response.

Purdue Global has been designated by the National Security Agency (NSA) and Department of Homeland Security as a National Center of Academic Excellence in Cyber Defense Education (<https://www.nsa.gov/resources/students-educators/centers-academic-excellence/#defense>) (CAE-CD). More information can be found on the following website: <https://www.nsa.gov/Academics/Centers-of-Academic-Excellence/>.

## Concentrations

In addition to the core program requirements, you may add a concentration to your degree plan, for which you are required to take a minimum of four courses from one of seven concentrations: Amazon Web Services (AWS) cloud technologies, blockchain technologies and apps, critical infrastructure security, data analytics, enterprise architecture systems, project management, or secure software development and quality assurance. Concentrations are not required for completion of the general program.

## Program Length

The Master of Science in Cybersecurity Management program consists of a minimum of 60 to 80 quarter credit hours, depending on your choice of the general program or a concentration. Upon successful completion of the program, you will be awarded a master of science degree.

## Program Outcomes

1. Theory and Principles: Evaluate theories, principles, and best practices related to the evolving global cybersecurity landscape by assessing and reviewing recent strategies.
2. Industry Research: Demonstrate the scholastic maturity to develop research topics and projects based on underlying cybersecurity principles learned throughout the program.
3. Critical Thinking: Recommend appropriate cybersecurity theories and frameworks to stakeholders to evaluate, mitigate, and manage ongoing risks, threats, and vulnerabilities in contexts of uncertainty.
4. Decision Analysis: Analyze data using accepted best practices for the purpose of synthesizing an effective and ethical cybersecurity solution.

## Professional Competencies

In addition to the discipline-specific outcomes, professional competencies are integrated throughout your academic program. You can review the professional competencies associated with your academic program in the Professional Competencies (<https://catalog.purdueglobal.edu/graduate/professional-competencies/>) section of this Catalog.

## Program Availability

For program availability, please refer to the U.S. State and Other Approvals (<https://catalog.purdueglobal.edu/policy-information/university-information/accreditation-approvals-memberships/>) section and Program Availability Information (<https://www.purdueglobal.edu/catalog-program-availability-info.pdf>).

## Policies

### Admissions Requirements

You must meet the below admissions requirements in addition to Purdue Global's general requirements (<https://catalog.purdueglobal.edu/policy-information/admissions/>).

Students entering the Master of Science in Cybersecurity Management program should already possess an in-depth knowledge of computer systems and networking technology, good mathematical and communication skills, and familiarity with Internet and wireless applications. Required information technology (IT) skillsets should be equivalent to a Bachelor of Science in Information Technology (BSIT), a Master of Science in Information Technology (MSIT), or similar degree, or an appropriate combination of IT professional certifications and experience.

### Secure Software Development and Quality Assurance Concentration

To enroll in the secure software development and quality assurance concentration, you must have a minimum of 2 years of programming or software development experience.

## Progression Requirements

If, for any reason, you are required to complete additional capstone hours during your program, you may complete them during the normal course of study or you may contact your Student Advisor to secure an extension. IT596 IT Graduate Capstone Extension Course is taken after IT595 Master's Capstone in Cybersecurity Management and is for the specific purpose of providing a means for capstone project completion. Approval of the Dean or the Department Chair is required for enrollment in IT596 IT Graduate Capstone Extension Course. If an extension is granted, the University will not charge tuition for the extension course; however, you will be required to pay the normal resource fee.

## Certification, State Board, and National Board Exams


Certification and licensure boards have state-specific educational requirements for programs that lead to a license or certification that is a precondition for employment. Prospective and current students must review Purdue Global's State Licensure and Certifications (<https://www.purdueglobal.edu/about/accreditation/licensure-state-authorizations/>) site to view program and state-specific licensure information.

Licensure-track programs may limit enrollment to students in certain states; please see Purdue Global's Program Availability Information

(<https://www.purdueglobal.edu/catalog-program-availability-info.pdf>) to determine enrollment eligibility.














You are responsible for understanding the requirements of optional certification exams. Such requirements may change during the course of your program. You are not automatically certified in any way upon program completion. Although certain programs are designed to prepare you to take various optional certification exams, Purdue Global cannot guarantee you will be eligible to take these exams or become certified. Your eligibility may depend on your work experience, completion of education and/or degree requirements, not having a criminal record, and meeting other certification requirements.

## Degree Plan

The  icon appears in the title of traditional courses that are also available as a set of module courses. Module course availability may be limited to certain academic calendars. See Course

Types (<https://catalog.purdueglobal.edu/policy-information/university-information/approach-to-learning/>) for information about module courses.

## Program Requirements

| Code                              | Title  | Credits      |
|-----------------------------------|--|--------------|
| <b>Core Requirements</b>          |  |              |
| IN505                             |  Security for Analytics                       | 4            |
| IT513                             |  Research and Writing for the IT Professional | 4            |
| IT527                             |  Foundations in Data Analytics              | 4            |
| IT528                             |  Quantitative Risk Analysis                 | 4            |
| IT537                             |  Introduction to Cybersecurity              | 4            |
| IT540                             |  Management of Information Security         | 4            |
| IT542                             |  Ethical Hacking and Network Defense        | 4            |
| IT543                             |  Cryptography Concepts and Techniques       | 4            |
| IT544                             |  Platforms, Applications, and Data Security | 4            |
| IT545                             |  Wireless, Mobile, and Cloud Security       | 4            |
| IT550                             |  Computer Forensics and Investigations      | 4            |
| IN555                             | Statistics for the IT Professional   | 4            |
| IT590                             |  Legal and Ethical Issues in IT             | 4            |
| IT591                             |  IT Security Auditing and Assessments       | 4            |
| IT595                             | Master's Capstone in Cybersecurity Management  | 4            |
| Total Core Requirements           |  | 60           |
| <b>Concentration Requirements</b> |  |              |
| Concentration Courses (see below) |  | 0-20         |
| Total Concentration Requirements  |  | 0-20         |
| <b>TOTAL CREDITS</b>              |  | <b>60-80</b> |

## Concentration Requirements

Students in this program are not required to select a concentration.


### Amazon Web Services (AWS) Cloud Technologies

| Code  | Title                          | Credits |
|-------|--------------------------------|---------|
| IN515 | AWS Academy Cloud Foundations  | 4       |
| IN516 | AWS Academy Cloud Architecting | 4       |

|       |                                |   |
|-------|--------------------------------|---|
| IN517 | AWS Academy Cloud Developing   | 4 |
| IN518 | AWS Academy Data Analytics Lab | 4 |
| IN519 | AWS Academy Cloud Operations   | 4 |

**TOTAL CREDITS** **20**

### Blockchain Technologies and Apps

| Code        | Title   | Credits |
|-------------|---|---------|
| IN530       | Introduction to Blockchain  | 4       |
| IT530       |  Computer Networks | 4       |
| IN531       | Blockchain Technologies and Applications  | 4       |
| IN532       | Blockchain Application Development (dApps)  | 4       |
| IT Elective |   | 4       |

**TOTAL CREDITS** **20**

### Critical Infrastructure Security

| Code  | Title  | Credits |
|-------|--|---------|
| IN554 | Introduction to Critical Infrastructure Security | 4       |
| IN562 | Cyber Threat Intelligence                        | 4       |
| IN563 | Secure Supply Chain                              | 4       |
| IN564 | Critical Infrastructure Sector Security          | 4       |
| IN565 | Critical Urban Infrastructure Security           | 4       |



**TOTAL CREDITS** **20**

### Data Analytics

| Code  | Title                                | Credits |
|-------|--------------------------------------|---------|
| IN500 | Survey of Modern Data Analytics      | 4       |
| IN501 | Fundamentals of Computer Programming | 4       |
| IN502 | Python Statistical Tools             | 4       |
| IN504 | Advanced Applications of Python      | 4       |

**TOTAL CREDITS** **16**

### Enterprise Architecture Systems

| Code        | Title   | Credits |
|-------------|---|---------|
| IT525       |  Database Design and Data Modeling | 4       |
| IT530       |  Computer Networks                 | 4       |
| IN560       | Open Source Operating System Administration   | 4       |
| IN561       | Cloud Computing   | 4       |
| IT Elective |   | 4       |

**TOTAL CREDITS** **20**

### Project Management

| Code  | Title  | Credits |
|-------|--|---------|
| GM591 | Strategic Project Selection and Initiation                 | 4       |
| GM592 | Project Planning and the Project Plan                      | 4       |
| GM593 | Project Execution With Monitoring and Control              | 4       |
| GM594 | Project Closing, Ethics, and Professional Responsibilities | 4       |

**TOTAL CREDITS** **16**

**Secure Software Development and Quality Assurance**

| Code                 | Title  | Credits   |
|----------------------|--|-----------|
| IN510                | Secure Software Design                           | 4         |
| IN511                | Secure Coding                                    | 4         |
| IN512                | Advanced Secure Coding                           | 4         |
| IN513                | System and Security Testing                      | 4         |
| IN514                | Secure Development and Operations -<br>SecDevOps | 4         |
| <b>TOTAL CREDITS</b> |  | <b>20</b> |