Program Guidebook

Master of Science, Cybersecurity and Information Assurance

The Master of Science in Cybersecurity and Information Assurance prepares security professionals to protect an organization's operations in cyberspace and safeguard the confidentiality, integrity, and availability of information. The comprehensive curriculum covers topics such as secure network design; cyber defense; penetration testing; cloud security; governance, risk, and compliance (GRC); software design; enterprise architecture; information security programs; and business continuity and disaster recovery (BCDR). The program equips students with competencies in the latest technologies and best practices in cybersecurity to effectively protect their organization's assets and manage operations in today's digital landscape. This program features nationally recognized, high-demand certifications in the field of cybersecurity.
Understanding the Competency-Based Approach

Practically speaking, how do competency-based programs like those offered at Western Governors University (WGU) work? Unlike traditional universities, WGU does not award degrees based on completion of a certain number of credit hours or a certain set of required courses. Instead, you will earn your degree by demonstrating your skills, knowledge, and understanding of important concepts.

Progress through a degree program is governed not by the amount of time you spend in class but by your ability to demonstrate mastery of competencies as you complete required courses. Of course, you will need to engage in learning experiences as you review competencies or develop knowledge and skills in areas in which you may be weak. To help you acquire the knowledge and skills you need to complete your courses and program, WGU provides a rich array of learning resources. Your program mentor will work closely with you to help you understand the competencies required for your program and to help you create a schedule for completing your courses. You will also work closely with course instructors as you engage in each of your courses. As subject matter experts, course instructors will guide you through the content you must master to pass the course assessments.

The benefit of this competency-based system is that it enables students who are knowledgeable about a particular subject to make accelerated progress toward completing a degree, even if they lack college experience. You may have gained skills and knowledge of a subject while on the job, accumulated wisdom through years of life experience, or already taken a course on a particular subject. WGU will award your degree based on the skills and knowledge that you possess and can demonstrate—not the number of credits hours on your transcript.

Accreditation

Western Governors University is the only university in the history of American higher education to have earned accreditation from four regional accrediting commissions. WGU's accreditation was awarded by (1) the Northwest Commission on Colleges and Universities, (2) the Higher Learning Commission of the North Central Association of Colleges and Schools, (3) the Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges, and (4) the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges. The university's accreditation status is now managed by the Northwest Commission on Colleges and Universities (NWCCU), which reaffirmed WGU's accreditation in February 2020. The WGU Teachers College is accredited at the initial-licensure level by the Council for the Accreditation of Educator Preparation (CAEP) and by the Association for Advancing Quality in Educator Preparation (AAQEP). The nursing programs are accredited by the Commission on Collegiate Nursing Education (CCNE). The Health Information Management program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). The College of Business programs are accredited by the Accreditation Council for Business Schools and Programs (ACBSP).

The Degree Plan

The focus of your program is your personalized Degree Plan. The Degree Plan is a detailed blueprint of the courses you will need to complete in order to earn your degree. The Degree Plan also lays out the accompanying learning resources and assessments that compose your program. The list of courses in the Degree Plan is often referred to as the standard path. The amount of time it takes to complete your program depends on both the amount of new information you need to learn and the amount of time you plan to devote each week to study. Your program mentor and course instructors will help you assess your strengths and development needs to establish a study plan.

Students vary widely in the specific skills and information they need to learn. For example, some students may be highly knowledgeable in a particular subject matter and would not need to engage in new learning opportunities. Other students may find that portions of the program require them to learn new information and that they need to take an online class or participate in a study module to acquire the knowledge and skills needed to fulfill program competencies in that area. Some individuals may be able to devote as little...
as 15–20 hours per week to the program, while others may need to devote more time. For this reason, pre-assessments are there to help your program mentor form a profile of your prior knowledge and create a personalized Degree Plan.

**How You Will Interact with Faculty**

At WGU, faculty serve in specialized roles, and they will work with you individually to provide the guidance, instruction, and support you will need to succeed and graduate. As a student, it is important for you to take advantage of this support. It is key to your progress and ultimate success.

Upon your enrollment, you will be assigned a program mentor—an expert in your field of study who will provide you with regular program-level guidance and support from the day you start until the day you graduate. Your program mentor will set up regular telephone appointments (weekly at first) with you, which you will be expected to keep. The mentor will review program competencies with you and work with you to develop a plan and schedule for your coursework. Your program mentor will serve as your main point of contact throughout your program—helping you set weekly study goals, recommending specific learning materials, telling you what to expect in courses, and keeping you motivated. In addition to regular calls, your program mentor is available to help you resolve questions and concerns as they arise.

You will also be assigned to a course instructor for each course. Course instructors are subject matter experts who will assist your learning in each individual course. When you begin a new course, your assigned course instructor will actively monitor your progress and will be in touch to offer one-on-one instruction and to provide you with information about webinars, cohort sessions, and other learning opportunities available to help you acquire the competencies you need to master the course. Your course instructor can discuss your learning for the course, help you find answers to content questions, and give you the tools to navigate the course successfully. In addition, you will communicate with course instructors by posting in the online learning community and participating in live discussion sessions such as webinars and cohorts.

For many of the courses at WGU, you will be required to complete performance assessments. These include reports, papers, presentations, and projects that let you demonstrate your mastery of the required competencies. A separate group of faculty members, called evaluators, will review your work to determine whether it meets requirements. Evaluators are also subject matter experts in their field of evaluation. If your assessment needs further work before it “meets competency,” these evaluators, who review your work anonymously, will provide you with evaluation feedback to help you demonstrate competency and allow you to advance.

**Connecting with Other Mentors and Fellow Students**

As you proceed through your Degree Plan, you will have direct contact with multiple faculty members. These communications can take a variety of forms, including participation in one-on-one discussions, chats in the learning communities, and live cohort and webinar opportunities. As a WGU student, you will have access to your own personal MyWGU Student Portal, which will provide a gateway to your courses of study, learning resources, and learning communities where you will interact with faculty and other students.

The learning resources in each course are specifically designed to support you as you develop competencies in preparation for your assessments. These learning resources may include reading materials, videos, tutorials, cohort opportunities, community discussions, and live discussions that are guided by course instructors who are experts in their field. You will access your program community during your orientation course to network with peers who are enrolled in your program and to receive continued support through professional enrichment and program-specific chats, blogs, and discussions. WGU also provides Student Services associates to help you and your program mentor solve any special problems that may arise.

**Orientation**
The WGU orientation course focuses on acquainting you with WGU’s competency-based model, distance education, technology, and other resources and tools available for students. You will also utilize WGU program and course communities, participate in activities, and get to know other students at WGU. The orientation course must be completed before you can start your first term at WGU.

**Transferability of Prior College Coursework**

Because WGU is a competency-based institution, it does not award degrees based on credits but rather on demonstration of competency. However, if you have completed college coursework at another accredited institution, or if you have completed industry certifications, you may have your transcripts and certifications evaluated to determine if you are eligible to receive some transfer credit. The guidelines for determining what credits will be granted varies based on the degree program. Students entering graduate programs must have their undergraduate degree verified before being admitted to WGU. To review more information in regards to transfer guidelines based on the different degree programs, you may visit the Student Handbook found at the link below and search for “Transfer Credit Evaluation.”

[Click here for the Student Handbook](#)

WGU does not waive any requirements based on a student's professional experience and does not perform a "résumé review" or "portfolio review" that will automatically waive any degree requirements. Degree requirements and transferability rules are subject to change in order to keep the degree content relevant and current.

Remember, WGU's competency-based approach lets you take advantage of your knowledge and skills, regardless of how you obtained them. Even when you do not directly receive credit, the knowledge you possess may help you accelerate the time it takes to complete your degree program.

**Continuous Enrollment, On Time Progress, and Satisfactory Academic Progress**

WGU is a "continuous enrollment" institution, which means you will be automatically enrolled in each of your new terms while you are at WGU. Each term is six months long. Longer terms and continuous enrollment allow you to focus on your studies without the hassle of unnatural breaks between terms that you would experience at a more traditional university. At the end of every six-month term, you and your program mentor will review the progress you have made and revise your Degree Plan for your next six-month term.

WGU requires that students make measurable progress toward the completion of their degree programs every term. We call this “On-Time Progress,” denoting that you are on track and making progress toward on-time graduation. As full-time students, graduate students must enroll in at least 8 competency units each term, and undergraduate students must enroll in at least 12 competency units each term. Completing at least these minimum enrollments is essential to On-Time Progress and serves as a baseline from which you may accelerate your program. We measure your progress based on the courses you are able to pass, not on your accumulation of credit hours or course grades. Every time you pass a course, you are demonstrating that you have mastered skills and knowledge in your degree program. For comparison to traditional grading systems, passing a course means you have demonstrated competency equivalent to a “B” grade or better.

WGU assigns competency units to each course in order to track your progress through the program. A competency unit is equivalent to one semester credit of learning. Some courses may be assigned 3 competency units while others may be as large as 12 competency units.

Satisfactory Academic Progress (SAP) is particularly important to students on financial aid because you must achieve SAP in order to maintain eligibility for financial aid. We will measure your SAP quantitatively by reviewing the number of competency units you have completed each term. In order to remain in good
academic standing, you must complete at least 66.67% of the units you attempt over the length of your program—including any courses you add to your term to accelerate your progress. Additionally, during your first term at WGU you must pass at least 3 competency units in order to remain eligible for financial aid. We know that SAP is complex, so please contact a financial aid counselor should you have additional questions. *Please note: The Endorsement Preparation Program in Educational Leadership is not eligible for federal financial aid.

Courses

Your Degree Plan includes courses needed to complete your program. To obtain your degree, you will be required to demonstrate your skills and knowledge by completing the assessment(s) for each course. In general, there are two types of assessments: performance assessments and objective assessments. Performance assessments contain, in most cases, multiple scored tasks such as projects, essays, and research papers. Objective assessments include multiple-choice items, multiple-selection items, matching, short answer, drag-and-drop, and point-and-click item types, as well as case study and video-based items. Certifications verified through third parties may also be included in your program. Certification exams may require travel to a physical testing center or online proctoring. More detailed information about specific assessments and testing procedures is provided in each course of study and the student handbook.

Learning Resources

WGU works with many different educational partners, including enterprises, publishers, training companies, and higher educational institutions, to provide high-quality and effective learning resources that match the competencies you are developing. These vary in type, and may be combined to create the best learning experience for your course. A learning resource can be an e-textbook, online module, study guide, simulation, virtual lab, tutorial, or a combination of these. The cost of most learning resources are included in your tuition and Learning Resource Fee. They can be accessed or enrolled for through your courses. Some degree-specific resources are not covered by your tuition, and you will need to cover those costs separately. WGU also provides a robust library to help you obtain additional learning resources, as needed.

Mobile Compatibility:

The following article provides additional details about the current state of mobile compatibility for learning resources at WGU.

Student Handbook article: Can I use my mobile device for learning resources?

Standard Path

As previously mentioned, competency units (CUs) have been assigned to each course in order to measure your academic progress. If you are an undergraduate student, you will be expected to enroll in a minimum of 12 competency units each term. Graduate students are expected to enroll in a minimum of 8 competency units each term. A standard plan for a student for this program who entered WGU without any transfer units would look similar to the one on the following page. Your personal progress can be faster, but your pace will be determined by the extent of your transfer units, your time commitment, and your determination to proceed at a faster rate.
**Standard Path for Master of Science, Cybersecurity and Information Assurance**

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<th>Course Description</th>
<th>CUs</th>
<th>Term</th>
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<td>1</td>
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<td>Secure Network Design</td>
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<tr>
<td>Security Operations</td>
<td>4</td>
<td>1</td>
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<tr>
<td>Penetration Testing</td>
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<td>2</td>
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<td>Cloud Security</td>
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<td>Secure Software Design</td>
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**Prerequisites**

The standard path at WGU is essential for students to achieve success in their academic pursuits. By following the recommended sequence of courses, students pace their progress and build the necessary skills and competencies for future success. Prerequisite courses ensure that students have a comprehensive understanding of fundamental concepts and competencies necessary for completing advanced coursework.

The MSCSIA program requires students to complete courses in a specific sequence. Students and program mentors work together to plan the appropriate prerequisites for advanced courses and adhere to the standard path as recommended. Any exception to the prerequisite policy must be approved by faculty management.

The standard path is the recommended sequence for best success. The MSCSIA program requires that the following courses be taken as prerequisites to the next set of courses. Some courses may have additional prerequisites, refer to the course pages for more details.

(Prerequisite 1) These courses are foundational and are prerequisites to all remaining courses.
- D481 Security Foundations
- D482 Secure Network Design

(Prerequisite 2) Complete this prerequisite before moving to the next section:
- D483 Security Operations

(Prerequisite 3) Complete these prerequisites before moving to the next section:
- D484 Penetration Testing
- D485 Cloud Security

(Prerequisite 4) Complete this prerequisite before moving to the next section:
- D488 Cybersecurity Architecture and Engineering

All prerequisites must be satisfied prior to taking the following course(s):
- D489 Cybersecurity Management
- D490 Cybersecurity Graduate Capstone
Changes to Curriculum

WGU publishes an Institutional Catalog, which describes the academic requirements of each degree program. Although students are required to complete the program version current at the time of their enrollment, WGU may modify requirements and course offerings within that version of the program to maintain the currency and relevance of WGU’s competencies and programs. When program requirements are updated, students readmitting after withdrawal from the university will be expected to re-enter into the most current catalog version of the program.
Areas of Study for Master of Science, Cybersecurity and Information Assurance

The following section includes the areas of study in the program, with their associated courses. Your specific learning resources and level of instructional support will vary based on the individual competencies you bring to the program and your confidence in developing the knowledge, skills, and abilities required in each area of the degree. The Degree Plan and learning resources are dynamic, so you need to review your Degree Plan and seek the advice of your mentor regarding the resources before you purchase them.

**Security**

**Security Foundations**
Security Foundations lays the foundation for understanding terminology, principles, processes, and information security best practices at local and global levels. This course further provides an overview of networking components, network security vulnerabilities, and countermeasures for protecting information assets through planning and administrative controls within an organization.

This course covers the following competencies:

- Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.
- The learner identifies information assurance principles to ensure network security of an organization.
- The learner identifies network security operation principles, design principles, and best practices to protect an organization’s assets.
- The learner identifies fundamental networking infrastructure and protocols to support an organization.

**Network Design and Management**

**Secure Network Design**
Secure Network Design provides the foundational knowledge and skills to design secure physical and logical network architectures for wired and wireless networks. Course topics include the characteristics of a secure network, techniques to securely configure network devices, network segmentation strategies, root cause analysis, and mitigation approaches based on industry best practices. The course also offers hands-on experience in network vulnerability analysis and network configuration.

This course covers the following competencies:

- Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.
- The learner assesses business and technology needs, network security vulnerabilities, and security strategies.
- The learner aligns secure network architectures with industry best practices and the principles of secure network design.
- The learner recommends network security and vulnerability solutions.

**Hacking Countermeasures and Techniques**

**Security Operations**
Security Operations provides learners with the fundamental skills to handle and respond to computer security incidents in an information system. The course addresses various underlying principles and techniques for detecting and responding to current and emerging computer security threats. The course also helps learners explore strategies to leverage intelligence and threat detection techniques, analyze and interpret data, identify and address vulnerabilities, and suggest preventative measures. Methods are introduced to effectively respond to and recover from cybersecurity incidents, evaluate risk assessment methodologies, and apply incident handling laws and policies.

This course covers the following competencies:
- Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.
- The learner manages security testing and response in defense of organizational threats and vulnerabilities.
- The learner applies software and system security controls and procedures for data protection.
- The learner applies improvement techniques and automation based on system monitoring and threat hunting.
- The learner applies incident response procedures based on digital forensic analysis.
- The learner applies security concepts to risk mitigation with regard to privacy and protection.
- The learner recommends solutions to respond to a detected cybersecurity incident.

Penetration Testing

Penetration Testing
Penetration Testing introduces learners to the skills necessary to perform penetration testing and vulnerability management within an organization. The course covers widely used penetration testing techniques and tools that focus on planning and scoping, information gathering, vulnerability identification, and attacks and exploits. In addition, it offers hands-on experience and a focus on penetration testing engagement plans.

This course covers the following competencies:
- Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.
- The learner defines the scope and planning for procurement of penetration testing engagements.
- The learner performs cyber reconnaissance techniques for information gathering and vulnerability identification.
- The learner develops penetration testing techniques in exploitation of physical, digital, and social vulnerabilities.
- The learner simulates attacks and responses on an organization's security infrastructure.
- The learner reports the results of cybersecurity assessments with recommended actions.
- The learner evaluates a penetration testing engagement plan.

Web and Cloud Security

Cloud Security
Cloud Security prepares learners to design solutions for cloud-based platforms and operations that maintain data availability while protecting the confidentiality and integrity of information. Course topics include cloud service models, deployment methods, identity and access management (IAM) strategies, auditing and monitoring strategies, assessing and mitigating common cloud security threats, and managing compliance and regulation requirements. The course also offers hands-on experience deploying and assessing IAM controls in a cloud environment.

This course covers the following competencies:
- Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.
- The learner designs secure cloud solutions for data protection.
- The learner implements secure identity and access management cloud solutions for data protection.
- The learner analyzes a risk management plan for threat mitigation countermeasures in the cloud.

Risk Management

Governance, Risk, and Compliance
Governance, Risk, and Compliance provides learners with advanced skills and knowledge to authorize and maintain information systems utilizing various risk management frameworks. The course focuses on the strategic and long-term alignment of an organization's information security program to regulatory requirements and organizational policies. Course topics include compliance and regulatory requirements, data classification and prioritization, security and privacy controls, compliance audits and remediation, and risk management plans.
This course covers the following competencies:

- Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.
- The learner evaluates a system security plan in line with business organizational strategy and regulatory compliance requirements.
- The learner develops a remediation plan for security and privacy compliance issues.

Software

Secure Software Design
Secure Software Design focuses on the variety of elements needed to address and implement secure software acquisition and development throughout the software development life cycle (SDLC). The course addresses people, technology, tools, and processes to design and develop consistently secure applications from start to finish. Additionally, it underscores the importance and value of the Defense in Depth principle across the entire SDLC. The course also introduces techniques to adapt common security activities to modern software development practices such as Agile and DevSecOps.

This course covers the following competencies:

- Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.
- The learner examines security principles, standards, and methods within the software development life cycle (SDLC).
- The learner assesses software requirements and risks to ensure threats are addressed.
- The learner evaluates software security test plan documentation and implementation strategies.
- The learner evaluates the effectiveness of software testing and deployment to ensure security and privacy issues are addressed.

Secure Systems Analysis & Design

Cybersecurity Architecture and Engineering
Cybersecurity Architecture and Engineering provides learners with advanced skills and knowledge to design secure enterprise architecture solutions. The course focuses on assessing cybersecurity readiness and implementing enterprise-wide solutions to protect data and comply with an organization's policies and frameworks. Course topics include integrating software applications, applying enterprise data security controls, evaluating cloud and virtualization solutions, analyzing threats and vulnerabilities, and responding to incidents.

This course covers the following competencies:

- Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.
- The learner designs secure network architecture solutions for the enterprise.
- The learner implements secure solutions to manage cybersecurity risks.
- The learner designs technical integration of cybersecurity solutions to protect enterprises.
- The learner develops secure architecture to comply with organizational governance, risk, and compliance strategies.

Cybersecurity Management

Cybersecurity Management prepares learners to develop organizational information security programs and policies that follow recognized standards, comply with all governing laws and regulations, and meet the needs of the company culture and management organization. The course covers how to perform risk management institutionally, how to manage compliance to information security requirements, and how to delegate compliance, risk, and security functions to specific roles within the organization. It also helps learners apply strategic decision-making as companies adapt to new technologies, processes, and people practices related to processing, managing, and protecting information resources.

This course covers the following competencies:
● Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.

● The learner describes the risks, standards, and roles that inform a company’s information security policy.

● The learner develops security policy, standards, procedures, and guidelines to strategically secure an organization’s assets.

Capstone

Cybersecurity Graduate Capstone
The Master of Science in Cybersecurity and Information Assurance (MSCSIA) Capstone project allows learners to demonstrate their capability to establish a durable cybersecurity and information assurance program. The capstone project challenges learners to integrate skills and knowledge from all program domains into one project that addresses a significant real-world cybersecurity problem.

This course covers the following competencies:

● The learner integrates and synthesizes competencies from across the degree program, thereby demonstrating the ability to participate in and contribute value to the chosen professional field.
Accessibility and Accommodations

Western Governors University is committed to providing equal access to its academic programs to all qualified students. WGU's Accessibility Services team supports this mission by providing support, resources, advocacy, collaboration, and academic accommodations for students with disabilities and other qualifying conditions under the Americans with Disabilities Act (ADA). WGU encourages student to complete the Accommodation Request Form as soon as they become aware of the need for an accommodation. Current and prospective students can reach the Accessibility Services team Monday through Friday 8:00 a.m. to 5:00 p.m. MST at 1-877-HELP-WGU (877-435-7948) x5922 or at ADASupport@wgu.edu.

Need More Information? WGU Student Services

WGU’s Student Services team is dedicated exclusively to helping you achieve your academic goals. The Student Services office is available during extended hours to assist with general questions and requests. The Student Services team members help you resolve issues, listen to student issues and concerns, and make recommendations for improving policy and practice based on student feedback.

Student Services team members also assist with unresolved concerns to find equitable resolutions. To contact the Student Services team, please feel free to call 877-435-7948 or e-mail studentservices@wgu.edu. We are available Monday through Friday from 6:00 a.m. to 10:00 p.m., Saturday from 7:00 a.m. to 7:00 p.m., mountain standard time. Closed Sundays.

If you have inquiries or concerns that require technical support, please contact the WGU IT Service Desk. The IT Service Desk is available Monday through Friday, 6:00 a.m. to 10:00 p.m. and Saturday and Sunday, 10:00 a.m. to 7:00 p.m., mountain standard time. To contact the IT Service Desk, please call 1-877-HELP-WGU (877-435-7948) or e-mail servicedesk@wgu.edu. The support teams are generally closed in observance of university holidays.

For the most current information regarding WGU support services, please visit “Student Support” on the Student Portal at http://my.wgu.edu.