Genesee Community College Cybersecurity Student PC Recommended Specifications

Introduction and How to Use This Guide

Selecting the right computer is one of the most important decisions you'll make before beginning the Cybersecurity degree program at Genesee Community College (GCC). Throughout your coursework, you will be expected to run multiple virtual machines, install industry-standard security tools, complete hands-on networking labs, and use a variety of software applications simultaneously. **Although all cybersecurity courses use simulations accessed via a browser, you may want to have access to a personal computer to enhance your hands-on learning experience.** Choosing a computer that meets or exceeds these recommendations will help ensure a smooth learning experience throughout the program.

Genesee Community College provides students with access to modern computer laboratories and technology resources on its Batavia Campus. These labs are equipped with the software and computing resources needed to complete coursework for the Cybersecurity degree program. Students who plan to attend classes primarily on the Batavia Campus will have access to these resources during scheduled lab hours and other designated times.

However, if you plan to complete your degree **entirely online or take advantage of GCC's HyFlex** learning modality, you should have regular access to a Windows-based desktop or laptop computer that meets the recommendations outlined in this guide. Because many cybersecurity courses require hands-on work with virtual machines and specialized software, having a capable personal computer is essential if you are unable to regularly use the campus computer labs.

This guide is organized by major hardware components, including the processor, memory, storage, networking, display, and operating system. Each section identifies **minimum, recommended, and high-performance specifications** for students who plan to run additional virtual machines, maintain larger lab environments, or use their computer for other demanding tasks.

As you review the recommendations, focus first on the **minimum specifications** to ensure compatibility with course requirements. If your budget allows, consider purchasing a system that meets or exceeds the **recommended specifications**. A higher-performance computer will provide a better experience during virtualization-intensive labs, remain useful longer, and be better equipped to handle future software updates and emerging cybersecurity technologies.

If you already own a computer, use this guide as a checklist to determine whether your current system can support the software and coursework required by the program. If you are purchasing a new computer, you can also share this guide with a retailer or manufacturer to help identify a system that meets the program's requirements.

By investing in a computer that meets these recommendations—or by planning to make regular use of the College's on-campus computing resources—you'll spend less time waiting for software to load and more time developing the practical skills needed for success in today's cybersecurity profession.

PC/Laptop Detailed Specifications Recommendations

Workloads

- Microsoft 365 applications
- Web browsing and cloud-based coursework
- VirtualBox or VMware Workstation with multiple Windows and Linux virtual machines
- PowerShell, Python, Bash, Wireshark, Nmap, Burp Suite, Git, and other cybersecurity tools, just to name a few
- Occasional AI-assisted development tools

Processor (CPU)

- Minimum: Intel Core Ultra 5, Intel Core i5 (13th Gen+), AMD Ryzen 5 7000-series+
- Recommended: Intel Core Ultra 7 or AMD Ryzen 7 AI processor for smoother virtualization and multitasking
- Required CPU Feature: Hardware virtualization (Intel VT-x/VT-d or AMD-V) must be supported and enabled in BIOS/UEFI

Memory (RAM)

- Minimum: 16 GB
- Recommended: 32 GB for running multiple virtual machines simultaneously
- High Performance: 64 GB

Storage

- Minimum: 1 TB NVMe PCIe SSD
- Recommended: 2 TB NVMe SSD if storing numerous VM images and snapshots
- High Performance: 1 TB NVMe PCIe SSD and 2 TB NVMe SSD

Graphics

- Minimum: Integrated graphics are sufficient
- High Performance: Dedicated GPU optional for AI, password-cracking labs, or GPU-accelerated workloads

Networking

- Wi-Fi 6E minimum and Bluetooth 5.3 or newer
- USB-C Ethernet adapter or built-in 2.5 Gb Ethernet

Camera / Audio

- 1080p webcam with microphone; 1440p or better preferred for HyFlex classes

Ports

- At least two USB-C (USB4/Thunderbolt preferred)
- One USB-A
- HDMI or DisplayPort output
- Headset jack

External Monitor

- Screen size:
  - Minimum: 19 inches
  - Recommended: 24–27 inches
- Resolution:
  - Minimum: 1920 × 1080
  - Recommended: 2560 × 1440
- Panel: IPS for clear text and wide viewing angles
- Finish: Matte or anti-glare
- Brightness:
  - Minimum: 250 nits
  - Recommended: 300+ nits
- Connections: HDMI or DisplayPort; USB-C is a useful additional option
- Ergonomics: Height-adjustable stand or VESA-mount compatibility recommended

For cybersecurity coursework, a 24-inch IPS monitor with a resolution of 1920 × 1080 or higher provides enough space to view virtual machines, terminals, documentation, and course materials side by side.

Operating System

- Windows 11 Pro recommended
- Linux will be used extensively through virtual machines or dual boot

Battery & Build

- 8–10 hours typical battery life
- Business-class PC/Laptop with durable keyboard and chassis recommended

PC/Laptop Recommendation Disclaimer

The specifications provided in this document are intended as general guidelines to help students select a Windows-based desktop or PC/Laptop computer well suited to the Cybersecurity degree program at GCC. These recommendations are designed to ensure your computer can successfully run the software, virtual machines, and security tools commonly used throughout the curriculum.

Your final purchasing decision should take into account your budget, personal preferences, and any additional uses you expect for the computer beyond coursework, such as gaming, graphic design, video editing, or business applications. While systems with higher specifications may provide better performance and a longer useful life, many students can successfully complete the program with a computer that meets the minimum requirements.

Technology changes rapidly, and hardware specifications evolve over time. The College may update these recommendations periodically to reflect current software requirements and industry best practices. If you have questions about purchasing a computer or whether a particular system is suitable for the program, please contact the Information Technology faculty before making your purchase.