

What type of computer do I need for the computing programs at Edinboro?

Update for COVID-19

As all Fall 2020 courses may have an online portion and/or an online final, you should have access to a computer or laptop. Chromebooks are not recommended. In addition, you may need a webcam and access to a scanner or phone camera. See below for more details.

Overview

There is no requirement that you purchase any computer equipment for face to face classes. For online classes you will need a computer (laptop or desktop) with Windows, Linux or macOS. A Chromebook is probably not acceptable.

We provide computer labs with workstations, servers, network, specialized hardware and software, and printers where you can work on class projects. As a CS Professor I would rather have you work in these labs, where you can get assistance from other students, tutors and faculty. Programming can be frustrating and it is nice to have a community of support where you can get help, ideas, and even vent a bit when you get stuck. The labs provide access to this community.

We use both Microsoft Windows and Linux in our classes and the labs provide you access to computers running both of these operating systems.

- Nearly all, if not all of the Linux software we use is free.
- We provide access to Windows software through the [Microsoft Imagine](#) program.

We provide remote access to Linux compute servers, so this is not an issue.

Unless you have strong preference, you will probably want Windows on your personal computer if you choose to have one. You can use most Linux software remotely, but this is more of a problem for Windows software. If you like macOS, this is an acceptable choice as well.

We do use minimal commercial software.

- The [Unreal Engine](#) is the current game engine we use in the game concentration. This software is free to use for non-commercial purposes.

In general, a Chromebook is probably not a viable solution. You can possibly make it work, but it will require much more effort on your part. You currently can not run VirtualBox, Unreal, or many other software packages on a Chromebook.

The campus has a good wireless network and there are many places across campus where you can sit and work with a laptop. We have many such areas in our building, Ross Hall.

Short Answer

Get a reasonable computer with at least 8GB of memory running Windows, Linux or macOS. A graphics card that will support a second monitor along with that second monitor would be very helpful.

Detailed Answer

For the first year and a half of the program you will be learning to program. You will spend quite a bit of time at the computer writing and debugging code. For the most part you will be working on a remote server so the primary concern will be a keyboard/mouse/monitor combination that you are comfortable with. You might want to consider

- A second monitor. Make sure that the graphics card in the computer can support two monitors (most do). This is extremely helpful as you will probably be using a web browser for reference in one monitor and multiple work areas (terminals, IDE, ...) in the second. This is not a requirement but extremely useful. Most of our lab computers have two monitors.
- At least 8 GB of memory, if not more.
 - Students in the game concentration will use Unreal Engine. The [requirements for Unreal](#) list this as a minimum.
 - For the systems network/systems admin concentration you will probably want to run virtual machines using [VirtualBox](#). They state "Depending on what guest operating systems you want to run, you will need at least 512 MB of RAM (but probably more, and the more the better). Basically, you will need whatever your host operating system needs to run comfortably, plus the amount that the guest operating system needs."
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- A quad core is a good upgrade, but you will probably get that anyway.

- Disk space becomes a consideration later in the program, but you will probably have sufficient disk space on anything you purchase. You will probably end up migrating work to the cloud anyway.

In addition to programming, you will be using your computer to do homework and write reports. You need to be comfortable using this computer for extended periods of time. The University provides access to Microsoft Office 365 while you are a student.

If you plan taking notes on your computer, you will want a laptop which is durable and reasonably light weight. You will frequently have classes which are back to back and you will not be able to return to student housing between every class. This means you will have to carry the laptop for most of the day. While the campus is not huge, you may have a 10 minute walk between classes or from your dorm room/car to your classes.

If you are in the game concentration, the requirements for the Unreal engine will probably change. UE5 is rumored to support real time ray tracing with the appropriate graphics cards. These will most likely change in the next few years. It might be a reasonable choice to hold off purchasing a system until you have finished the first year of the program if you currently have sufficient computer resources.

Covid-19 Answer

If classes are moved completely on line, you will probably double the amount of time you spend using your computer. While not required, the second monitor becomes even more important.

In addition, a webcam is helpful. This is not a problem if you have a laptop, but you might need to purchase something if you have a desktop. Fortunately, if they are in stock, these are very reasonably priced.

You might want to consider a low cost printer, possibly a all in one printer-scanner. You can take pictures of documents with your webcam or smart phone, but a scanner can be useful. This is completely optional.

If we are on line, you should seriously consider at least a minimal system. Sharing a computer among multiple people taking classes is definitely more of a challenge. The department does have a limited number of computers we can loan out if there is a need.