

KENZIE ACADEMY COMPUTER REQUIREMENTS

It's going to be the #1 tool in your career. You may use it more than anything in your life (other than a bed). So get the best one you can, treat it well, and pay for the warranty if you can afford it.



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Operating Systems	Hardware Models	Minimum Specs
macOS Catalina (10.15.x) or newer	Approved models only (no Hackintosh)	Memory: 8 GB+ Processor: "Intel" or "AMD" only(!) Storage: 10 GB+ of free space
Ubuntu 18.04.x or newer (avoid dual-boot)	Approved models only (avoid VMs)	Other: Headset, webcam, second monitor, etc.
Windows 10 Pro or Home	Any model with a physical keyboard	
Note: Chromebooks, Android devices, and iOS devices cannot run the software you will need.		

Some Good Advice

Computers: "You get what you pay for!"

Generally, when it comes to computers, you do get what you pay for – although sometimes you are paying, in part, for the aesthetics, build-quality, or the brand. *But as a rule-of-thumb, if a computer is inexpensive, it is not likely to last long.* So weigh your options: you don't want your computer breaking down during your time in the program, if you can help it.

If you're choosing Ubuntu, install it well *before* Orientation Day!

Have Ubuntu installed *before* Orientation Day. In fact, it is recommended that you have it installed *at least* one full week prior to Orientation Day, so that you can be sure to catch any difficulties early. It is your responsibility to have a working operating system, meeting or exceeding the above requirements, prior to starting the program.

Learners always fall behind *from the very beginning* if they do not show up prepared on Day One. That's not a good way to set yourself up for success! Falling behind on your work can lead to a "snowball effect" where you may fall further and further behind.

FAQ

Why is 8 GB the minimum required RAM memory?

8 gigabytes is not much in *today's* era of computing. You will be using a *lot* of RAM memory as either a developer or designer using modern software tools. Video conferencing software, which is necessary for remote learning, also consumes a *ton* of memory. So, the amount of RAM memory in your computer is very important to your daily work both in this program and for a career in tech.

If you are buying a new computer, do *not* skimp on memory if you can help it. If you can afford 12 GB or 16 GB, you will be glad you have it, but it is a terrible idea to attempt *less* than 8 GB.

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Why Intel or AMD processors ONLY? What about Apple M1 (Silicon)? And why is there no minimum required processor clock speed?

Here is the important rule-of-thumb: *If the processor has either "Intel" or "AMD" in the name, and the computer has at least 8 GB of RAM memory, your processor will meet your needs.*

Intel or AMD processors? These are the classic processors. They have the history of running most of the world's software, except for mobile devices (phones and tablets). They are stable, user-friendly, and abundant.

Apple M1 (Silicon) or other ARM-type processors? First of all, if your processor name includes "Intel" or "AMD," then you have nothing to worry about. If neither of those words are in the processor name or brand, then this is likely an ARM-type processor. If you are unsure: send us your computer's specs, especially the name of the processor and we'll confirm. We highly advise against any ARM-type processor, including the Apple M1 chip.

Apple M1 chips, now appearing in some 2020 and 2021 models, *are not compatible* with all the software you will need to run in our Software Engineering or Web Development programs. Further, these machines will use *far* more RAM memory than normal machines (because of the way the new compatibility features work).

We are performing ongoing tests with computers containing M1 chips, and we are following developments as they occur. We will remove this restriction as soon as we can be confident that the Apple M1 chip won't be a barrier to your education.

Clock speed? In recent years, a processor's reported clock speed ("1.7 Ghz" or "2 Ghz", for example) has become *increasingly unreliable* as an indicator of how well that processor will perform. This is due to changes in marketing strategies and new processor features. Most recent Intel or AMD processors in computers with at least

8 GB of RAM memory will perform well enough for this program.

If you are looking for a computer faster than our minimum requirements, we advise 12 GB or more of RAM memory, an SSD storage drive, and perhaps a dedicated graphics card.

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Why 10 GB or more of free space?

It really isn't a lot for storage devices. You will need to install large tools for this program in the Software Engineering and Web Development programs. So please ensure that you have plenty of space available.

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That's it? Is there anything else I can do for better specs?

Of course! We would, for example, recommend an SSD (solid-state drive) rather than a HDD (hard-disk drive). SSDs are far, far faster. This is the most easily-attainable improvement to performance, apart from increased RAM memory. But don't stress it if you don't end up with an SSD.

Good graphics support (especially a dedicated graphics card) can also provide a significant performance improvement. They are harder to find in the laptop ecosystem, so look for gaming or professional graphics-processing laptops, or look for desktop computers.

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Headset? Webcam? Second monitor?

A headphones, a mic, and webcam will be *essential* for communicating with instructors, other staff, and your peers – even if you are not a remote learner.

A headset will also be important for listening to video curriculum while in public spaces (such as a campus).

We would recommend avoiding the cheapest headsets, because the audio quality and volume levels of the mic and headphones will likely grow annoying to you and others. You don't need a super high-quality headset, or even a gaming headset (though these certainly work well), but do pick up the slightly-pricier kind, if you can afford it.

A note about Bluetooth headsets and headphones: You may be on your headset for *hours* every day. Wires are more reliable than Bluetooth and don't have batteries which need charged every day!

A second monitor? This one isn't a requirement, but it is extremely helpful. You will have a lot of things happening on your computer at one time, so it will save you a lot of time and frustration if you have more than one monitor to display your tools. You won't regret it.

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Why is macOS Catalina the oldest version allowed?

This is the oldest version of macOS which Apple will still support by the end of 2021.

Official support is critically important, especially because unsupported computers will not receive security fixes, and some of the tools we use may cease to work correctly on older versions of macOS.

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Why avoid Hackintosh installations of macOS?

Because Hackintosh is a cool idea, but it is the hardest option to get working correctly and is unreliable. We would *strongly* recommend against trusting your education and career to it, for now. If you don't know what "Hackintosh" is, then you have nothing to worry about.

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Wait, only Ubuntu? Can I use another Linux distribution?

All of the Linux-specific instructions in our curriculum are written for Ubuntu. It is also far easier to find Ubuntu-specific help on the Web than it is to find help for other distributions.

If you are already comfortable with another Linux distribution, however, you may choose to continue to use it – provided you understand that you will be responsible for figuring out the differences and fixing any problems that arise.

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Why do you recommend avoiding dual-boot setups between Ubuntu and Windows?

First of all, if you don't know what a "dual-boot setup" is, then don't worry: this won't affect you.

So why do we recommend avoiding dual-boot setups? At least once every six months, Microsoft releases a maintenance update which resets the system's bootloader. This is because the bootloader itself requires maintenance and Microsoft does not support dual-boot OS setups.

When this occurs, the computer suddenly forgets that Linux (Ubuntu) is installed, making it impossible to access your Linux installation – as well as making it *temporarily* appear that your entire Ubuntu installation was somehow deleted – until you fix the bootloader again.

The fix will vary, and is advanced even in the best cases. In the worst cases, it can be both difficult to research and complicated to accomplish. So avoid dual-booting or proceed with caution.

We cannot commit to providing IT support if your computer stops working. So if it goes wrong: it's up to you to find a solution! It's your property.

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Why avoid virtual machine installations of Ubuntu?

First of all, if you don't know what a "virtual machine" is, don't worry: this won't affect you.

For everyone else, avoid installing Ubuntu on a virtual machine unless you know your computer both supports virtualization and has the specs to support a virtualized Ubuntu at the same time as [Zoom](#) video streaming and [Google Chrome](#) with a dozen busy tabs open. If you intend to use a virtual machine for this course, you will need more than 8 GB of memory (RAM) – the more the better. Even 12 GB would be frustratingly slow sometimes.

Virtual machines have heavy performance requirements even beyond RAM, so it is best only to use them on gaming computers or other very high-end machines.

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Why not other versions of Windows?

Windows 7 and earlier versions are no longer receiving critical security updates from Microsoft. *No one* should be using them while connected to the Internet for even a few seconds. The risk to yourself and others is too great. Even if the machine seems to work fine, it is at much higher risk of being used to record your personal/financial data or operating as a drone in a botnet without your knowledge.

Windows 8.1 does not fully support certain features which you may require during our program. The chief concern is [WSL](#). Though WSL is not currently a requirement, it is increasingly useful for developers on Windows systems and may become a requirement during your time in the program.

[Windows 10 S](#) is a severely-restricting version of Windows 10, which – among other limitations – prohibits most types of software installation. Obviously, you will need to be able to install many types of software during the program, and you will need full control.

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Really? Any model?

Well, of course, you need to meet the minimum specs. But also try to stick with models which are well-reviewed and avoid new brands, especially those with unusual new features.

For example, the Dell XPS 13 released in 2020 is likely to be reliable because there have been prior versions in the XPS 13 line dating all the way back to 2012. They have had a lot of chances to get it right.

Microsoft Surface tablets *may* be used only in the following conditions:

- If you use a physical keyboard.
- If Windows Home or Pro is installed (Windows 10 S will not run some of the tools you will need).
- If the processor is Intel or AMD.
- If the RAM memory is at least 8 GB.

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Approved Laptop Models

For macOS

Only Apple computers compatible with macOS “Catalina” or “Big Sur” are approved, for important reasons [already mentioned](#). These include:

- **MacBook Pro or MacBook Air:** late-2013 or newer
- **MacBook:** early-2015 or newer
- **iMac:** mid-2014 or newer
- **iMac Pro:** 2017
- **Mac Pro:** 2019 or Late 2013
- **Mac Mini:** 2018 or Late 2014

For more details, see Apple’s lists of [Catalina-compatible](#) and [Big Sur-compatible computers](#).

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For Ubuntu

If you have already had Ubuntu running on your personal machine successfully for quite some time, don’t worry about the model. But if you are purchasing, get something you know will be compatible:

1. [Any laptop which is certified for Ubuntu](#) Desktop 18.04 and above.
2. [Dell XPS 13 Developer Edition](#) can come with Ubuntu pre-installed, optionally. This is the easiest (and most uncommon) way to get Ubuntu.
3. Most Lenovo Thinkpads, particularly those from the X or T lines. [Check Lenovo’s Linux for Personal Systems page](#) for compatibility: look for support for Ubuntu 18.04 (or above).

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