



Recommended Specifications for Student Laptops

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Do I need a computer to undertake the programme?

Yes, it is a requirement to have a suitable specified Windows-based computer to undertake the assigned work in your programme. As you will use it in class and studio, you will need a laptop. Tablets will not suffice.

If you already have a computer it may suffice for the first year of the programme or longer*. It need not meet the specifications detailed below, but it should be able to run the software used in your module courses. You will be informed of these once the courses start. Existing computers can often be upgraded to meet specification requirements.

**We will hold an information session on laptop specifications together with an introduction to some key digital skills in week 4 of term, Tues 30th Sept as part of Drawing + Making. At this session, we will discuss this spec and answer your questions. If you plan to buy a new laptop, you can wait until after this session, provided you are able to complete work in core modules on existing or borrowed tech.*

What hardware specification is required?

The following outlines both a minimum and 'better' specification for a recommended laptop. It is composed based on a considered balance between affordability, longevity and on the performance required to comfortably run applications that students will be expected to use.

Many laptop designs do not allow for the upgrade of some system components, so the specification you select may be fixed for the life of the laptop. Where budgets allow, a higher specification will ensure longevity.

Component description	Recommended specification	'Better' specification
Screen size ⁽¹⁾	15 inch	15 inch plus
Screen resolution	1920 x 1080	2560x1440 or above
Hard drive storage capacity ⁽²⁾	500 Gb SSD	1 Tb SSD/NVME
RAM	16 Gb	32 Gb plus
CPU/Processor ⁽³⁾	Suggested or similar: AMD Ryzen 5 7xxx or an Intel Core i5-14xxx	Suggested or similar: Intel Core i7-14xxx or AMD Ryzen 7 7xxx
Graphics processor ⁽⁴⁾	Intel or AMD Integrated Graphics	NVIDIA or AMD discrete graphics processors

Operating System ⁽⁵⁾	Windows 11	Windows 11
Networking ^(6, 7)	Wi-Fi <i>ac</i> standard	Wi-Fi <i>ax</i> standard
Ports	HDMI ⁽⁹⁾ and/or USB-C ⁽⁸⁾	HDMI ⁽⁹⁾ and/or USB-C ⁽⁸⁾
Webcam and microphone	Yes. 1280 x 720 pixels camera.	Yes. 1920 x 1080 pixels camera.
Mouse ^(b)	Optical cord or wireless	Optical cord or wireless

Additional considerations

- a) At the time of updating this note, gaming laptops have come down in price and offer very good value for generally high specifications. They are almost exclusively Windows-based PC's.
- b) Many find the use of the track pad on a laptop tiring and inaccurate for graphics work. **The purchase of an external mouse is essential** for ergonomic and extended as well as precision graphic and CAD work.
- c) USB memory devices are still used by many even with Internet Cloud services widely available. Remember to match the USB connector type with those available on your laptop. **NEVER use such a device for backing up work! Use the Cloud or an external hard drive.**
- d) A protective sleeve or backpack/bag with padded laptop pocket will help prevent damage when commuting or moving around campus.
- e) **Develop a backup strategy for your work from day one.** All UCD students have access, through their student account, to large storage capacity on Google Drive (and from 2026, Microsoft 365) which can be used for this purpose. Technology can be unreliable and losing hours or weeks of work can happen. **Backing up your work is essential.**
- f) Most problems that arise with computers happen within the first year or two. **Try to get as long a guarantee period** as you can, ideally at least two years.

Notes

- 1) 13, 14, 16 and 17 inch screen sizes are also common. If you prefer to use a larger screen size, an alternative strategy might be to consider an external monitor. Today laptops can generally support their own built-in screen and an additional larger monitor via HDMI or USB-C. A 24 or 27 inch external monitor works well for graphic/CAD work and is not overly expensive, depending on specification.
- 2) It is highly recommended to purchase a laptop with a solid state drive (SSD) or NVME type hard drive. These add considerably to a laptop's performance and improve battery performance. Upgrading to such a hard drive can considerably improve the performance of an older laptop with a HDD hard drive for a very modest cost.
- 3) This recommendation is based on both Intel and AMD processors. Both offer a regular line of processors and also those enhanced for AI use. At present, AI functionality is not required on the programme. These are also often more expensive. This component constitutes a significant percentage of the overall cost, so inform yourself and shop carefully.
- 4) Discreet graphics processors from both NVidia and AMD are particularly useful where graphics and rendering work is to be undertaken. Note, their inclusion will impact on price, are typically heavier laptops and require more power, with larger adapters.

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- 5) Software specified for use on academic programmes will always run on Windows, but may not run on a Mac (e.g. Autodesk). Only Windows laptops are specified here.
 - 6) Wi-Fi adapters in laptops vary. The letters denoting Wi-Fi adapter speeds are *a*, *b*, *g*, *n*, *ac* (*WiFi 5*), *ax* (*WiFi 6*) and *be* (*WiFi 7*), with *be* being the fastest. While *ax* and *be* are highly recommended and quickly becoming standard on most good quality laptops, your Wi-Fi router at home should be of equal spec to achieve optimum speeds. Adapters are backwards compatible, meaning that if your home router is *ac*, your laptop *ax* adapter will run at *ac* speed while connected. The UCD Wi-Fi system is *ac* throughout with some areas upgraded to *ax*. If you have not updated your home router in a while and are running at *n* speed, for example, you should be entitled to an upgrade by your network provider at no cost. Wi-Fi speed will help when using online conference software like Zoom, Microsoft Teams, etc.
 - 7) Ethernet network (cable) sockets are not required but do achieve faster speeds. Many laptops eliminate these to achieve a more compact size. They can be purchased as plug-in adapters at quite low cost if you want one. Ethernet ports are available throughout most rooms in UCD. Their Ethernet address must be registered with UCD to gain access to the network.
 - 8) USB port types on laptops are in transition, from Type A to Type C. Most mid-range and above laptops will provide both or, for slim models, only USB-C. Again, adapters to convert from Type A to C and vice versa can be purchased at low cost. A laptop with at least one Type C port is a good option to consider. If you buy a laptop with only Type C you can later purchase an adapter (or multi-port hub) for any legacy devices you may have, like USB memory sticks, etc.
 - 9) HDMI ports are standard on many laptops and support the connectivity of a second monitor or other device. On newer and slimmer laptops with USB Type C only, this USB port can also be used for displays either directly where the monitor has a Type C connection or with an adapter or hub to the HDMI port.