Computer Hardware for Students

The School of Architecture, Waterloo Architecture Cambridge

In the School of Architecture, students use computers in several lecture courses and in the design studio; as such, laptops are ubiquitous and essential in your academic life.

We recommend that each student has a laptop with an accelerated graphics card with the processing power, memory, storage and display resolution to support 3D graphics work. We expect the average cost of such a device to be approximately $3000.

Notes:

1. When making a purchase, look for educational discounts.
2. A higher performance laptop will offer longer service before requiring replacement. While managing a budget for a computer is a note worthy objective, the value of a high-performance laptop goes beyond financial implications.
3. Generally speaking, a gaming laptop possesses many of the elements required.
4. Most of the software required by the school runs effectively on Windows based computers. If you have a MAC, it is possible to have Windows installed on your MAC. Please note that 250GB of free hard drive space is required on your MAC to host a Windows operating system. To understand more about this process, please reach out to archit@uwaterloo.ca.
5. Students may be required to purchase additional software and hardware during their studies. Some of that software is listed below.
6. Extended warranties are advisable.

Minimum Requirements:

Hardware Component	Specification	Comments
Processor	Intel Core i7	
Screen Resolution	1920x1080	Typical screen size on this resolution is 15"/15.6"
Memory	16 GB RAM	
Storage	500 GB SSD	
Network	WiFi b/g/n/ac	
Video	Nvidia (recommended) AMD Raedon	These are examples of 3rd party graphics processing units (GPU) with 4GB
Web Cam	Internal camera	

Examples:

The following examples represent a small sample of available options from leading manufacturers. Computer choices should not be limited to this list; rather, these are suggestions based on current market availability.

Manufacturer	Models	Web Link
Dell	Alienware XPS 15 Precision 5000/7000 G5/G7	https://www.dell.com/en-ca/gaming/alienware-laptops
HP	OMEN	https://www8.hp.com/ca/en/gaming/omen.html
Lenovo	Legion Y Thinkpad P	https://www.lenovo.com/ca/en/pc
MSI	Stealth Raider P65	https://ca.msi.com/
ASUS	ROG	https://www.asus.com/ca-en/Laptops/ASUS-Laptop-Series-Products/
Acer	Nitro	https://www.acer.com/ac/en/CA/content/group/laptops

3D Rendering
3D rendering utilizes all the processing power available within a computer. This consumption of power generates considerable amount of heat. We suggest a laptop cooling pad/mat.

Back Ups
Students are responsible for their own data security. An effective paradigm is the use of two distinct media types to manage critical data; for example, a USB flash drive and a USB external hard drive, or, a USB hard drive and cloud storage.

Workstation Considerations (not required):
Consider adding a docking station, or port replicator to your home environment to dynamically add a dedicated keyboard, mouse and a larger monitor to your work station. A screen larger than 15" can extend your viewing range considerably. A USB3, or USBC (thunderbolt) port replicator is an inexpensive accessory that can make working at home much more enjoyable. Each vendor will have their own docking stations, or port replicators, but the market is full of third party alternatives. When looking for a docking station, or port replicator, consider the following:

- Number of USB ports/ USBC (thunderbolt) ports
- A dedicated Ethernet (network) port
- A VGA and a HDMI, or Display Port port.
- SD memory card reader
- Audio port.

Fee Based Software
- Rhinocerous 6 (https://www.studica.com/ca/en , or https://www.rhino3d.com/6)
- Adobe Creative Cloud (http://www.adobe.com/ca/creativecloud/buy/students.html)

Free Software
- Office365 (https://portal.office.com – sign in with watiam_username@uwaterloo.ca and password – includes 5TB of Microsoft's cloud storage)
- Autodesk (https://www.autodesk.com/education/free-software/featured)
- Vectorworks (https://www.vectorworks.net/en-CA/education)

Support
Architecture, Computing and Media (ACM) provides general support for Windows and Apple platforms. This includes computer setup, software installation, network connectivity, and virus/spyware assistance. CAD/Modelling software is outside of the scope of ACM. ACM support can be reached at the following email address: archit@uwaterloo.ca

University of Waterloo Computing Sites
- https://uwaterloo.ca/information-systems-technology/
- https://uwaterloo.ca/information-systems-technology/services/software-students/available-software-students
- http://uwaterloo.ca/architecture/resources/architecture-computing-media.