



Computer Hardware/Software for Students in Architectural Engineering

As an Architectural Engineering student at the University of Waterloo (UW), having a laptop is essential. You'll use it in lecture courses, design studios, and while moving between different campuses. In addition to personal equipment, both the Department of Civil and Environmental Engineering (CEE) and the Faculty of Engineering (FOE) provide computer labs. CEE offers access to [Departmental Labs](#) and FOE provides general use [public computer labs](#). Computer-based teaching begins in the first term, so it's crucial to have a mid-range laptop with sufficient processing power, memory, storage space, and display resolution for moderate 3D graphics work. Don't forget to consider warranty protection when making your purchase. We recommend budgeting around \$2,000 - \$2,500, keeping in mind that prices and models can vary.

NOTE: When buying hardware/software, verify you apply the appropriate educational discounts. The [Waterloo Store](#) may have deeper educational discounts for the product you're looking for. You may contact them at wstore@uwaterloo.ca.

Mandatory Minimum Laptop Requirements

Hardware component	Specification	Comments
Processor	Intel Core i7 or AMD Ryzen 7	Minimum 6 cores, 8 threads
Display	1920 x 1080 pixels resolution minimum	15-inch screen is preferable
Memory	16 GB RAM minimum	RAM = Random Access Memory
Storage	512 GB M.2 SSD storage drive minimum	Storage size should be dependent on your needs. However, 512GB is recommended due to the size of the software you will be using. Keep in mind that 5TB of space is available through OneDrive.
Network	Wi-Fi 6 (802.11ax) minimum	Necessary to connect to campus Wi-Fi
Video card	4GB minimum, 8GB recommended Must support Direct X11 and OpenGL 4.1 or above	Discrete (not integrated) graphics are necessary to achieve the minimum requirements.
Ethernet port or adapter	10/100/1000BASE-T Gigabit Ethernet	Available in residence

NOTE: When choosing a laptop for your coursework, it's essential to ensure that its specifications meet or exceed the minimum requirements. This ensures optimal performance and compatibility with the software you'll be using.



Make	Models	Website
IBM/Lenovo	ThinkPad P-Series or similar	Lenovo Canada: Mobile Workstation Laptop ThinkPad P Series Laptops
Dell	XPS Series	15 inch Dell XPS Laptops - Dell Laptops Dell Canada
Asus	Asus ZenBook 15 Series	ASUS Canada: Zenbook Pro 15 UX535 Laptops For Home

Recommended Supplementary Purchases

Hardware component	Specification	Comments
Extended Warranty (Highly recommended)	3-year premium warranty for your device.	A recommended part of any laptop purchase, which ensures a greater return on investment.
Mouse	Multiple buttoned mice with scroll wheel.	Having a mouse that can use macro can aid in productivity and efficiency.
Separate Screen	Larger resolution display screen (24-27inch)	A recommended purchase for productivity and efficiency.
USB-C Hub	Suggest ports include HDMI, USB-A, and Ethernet	Space saving solution for adding ports to your laptop. Make sure connectivity is compatible with your laptop.
USB 3.0 Flash Drive, or Thunderbolt/USB external Hard Drive	32 GB or better	See section 6 on Data Security for more information. Note: A USB Flash Drive is not adequate as a primary means of backup.
Headset	USB/Bluetooth with Mic	Noise cancelling mic may help in meetings and interviews.
Laptop Stand	Height adjustable and prevents over heating	Make sure that the laptop stand will hold your laptop model securely.

NOTE: Your individual computer needs may vary. You may choose to purchase additional supporting equipment such as a backup hard drive, a small desktop printer, docking station, etc.

Apple or Microsoft?

While Architectural Engineering has previously supported Apple applications, in the future we are **no longer recommending** the use of Apple-based platforms and operating systems.



Required Software

Required Software	How to obtain
Windows 10	Windows 10 is provided free of charge to UW students. Activate your Windows account using your WatIAM username and password
Office 365	Office 365 (Word, PowerPoint, Excel and more) is provided free of charge to UW students for Microsoft platforms and can be installed on up to 5 devices. Activate your Office 365 account using your WatIAM username and password
AutoCAD/Revit	AutoDESK is available free of charge to UW students for Microsoft platforms. Activate your Autodesk account

Optional Software

Optional Software	How to obtain
Rhino	Rhino is available to UW students on computers in a computer lab. We offer students the opportunity to purchase a student license at a considerably discounted rate, at the beginning of the 1B academic term. It is also purchasable in the Waterloo Store
Adobe Creative Cloud	Available in the Waterloo Store
OneDrive	OneDrive is provided free of charge to UW students for Microsoft platforms and offers 5TB of cloud storage. Activate your Office 365 account using your WatIAM username and password
Azure for Education	Students receive developer tools from Microsoft at no cost. This includes software such as Project, Visio and operating systems. Access Azure Dev Tools for Teaching

NOTE: We strongly encourage students NOT to purchase Rhino or the Adobe Creative Cloud prior to starting Architectural Engineering in Fall. The course instructor will advise when this software becomes a requirement.

Licensing

Most professional software packages used in the program offer a free or a discounted academic license option for students. However, it is important to note that software licensing agreements and pricing change frequently and without notice. Students will be expected to acquire licenses for their software during the length of the program.



Data security

Students are responsible for their own data security. Back up often to reduce data loss. We encourage students to take advantage of the secure network storage space provided by Engineering – the [N:Drive](#) or Microsoft's [OneDrive](#) that is available with your student account.

Technical Support

- **Waterloo**
[Civil and Environmental Engineering Computing \(CEEC\)](#) is available to consult with students. CEEC provides general support for Windows platforms. Application-level support for course software is not provided, but direction to the proper people for support is provided to students. CEEC provides hardware and software support for all department-level computing facilities. You can also email civrt@uwaterloo.ca for help.
- **Cambridge (Third year students only)**
[Architecture, Computing and Media \(ACM\)](#) staff make themselves available to consult with students. ACM provides general support for Windows and Apple platforms and helps with network connectivity problems and virus/spyware removal. Application-level support for CAD modelling software is outside ACM's expertise; for this software, students should seek support from an instructing faculty member.
- [Faculty of Engineering Computing Support](#)
- [Campus-Wide Information Technology Support](#)

[More information on the location of helpdesks and contact information.](#)

Financial support

Ontario Student Loans now provide support for purchasing a computer. See "How student loans are determined" at: [OSAP: Ontario Student Assistance Program | ontario.ca](#)

Questions

Contact archeng@uwaterloo.ca.