



## Computer Hardware/Software for Civil Engineering

As a student in the Civil Engineering program at the University of Waterloo (UW), having a computer is essential for your academic studies. 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 \$1,500 - \$2,000, keeping in mind that prices and models can vary.

**NOTE:** When purchasing hardware or software, be sure to apply any applicable educational discounts. The [Waterloo Store](#) may offer deeper educational discounts for the product you're looking for. You may contact them at [wstore@uwaterloo.ca](mailto:wstore@uwaterloo.ca)

### Recommended Minimum Device Requirements

#### Note Taking Tablet

If you already have a desktop or laptop and are seeking a device specifically for note-taking, consider an affordable tablet. We recommend choosing a tablet that runs Android OS or iOS, ensuring compatibility with MS OneDrive and Teams. Below, you'll find the recommended sample tablets and accessories.

Keep in mind that this tablet is intended solely for note-taking purposes; it won't support course-specific software installations. For tasks like running ArcGIS or SAP2000, rely on your desktop instead.

Make	Models	Complementary Accessories
IBM/Lenovo	<a href="#">Lenovo Tab</a>	<a href="#">Lenovo Tab Pen Plus</a>
Samsung	<a href="#">Galaxy Tablet</a>	<a href="#">Galaxy Tablet Accessories</a>
Apple	<a href="#">Apple iPad</a>	<a href="#">Apple Keyboard</a> and <a href="#">Apple Pen</a>
Microsoft	<a href="#">Surface Go 4</a>	<a href="#">Surface Go Type Cover</a> and <a href="#">Surface Pen</a>



## Your Everything Laptop

If you're seeking a laptop capable of handling all your university coursework, consider investing in a mid-range model. We recommend choosing a laptop with the specifications listed below to ensure seamless access to course materials, software, and campus networking.

Hardware component	Specification	Comments
<b>Processor</b>	Intel Core i7 or AMD Ryzen 7	Minimum 6 cores, 8 threads.
<b>Display</b>	1920 x 1080 pixels resolution minimum	15-inch screen is preferable. Touch screen with digitizer is recommended if device is to be used for notetaking.
<b>Memory</b>	16 GB RAM minimum	RAM = Random Access Memory
<b>Storage</b>	256-512GB SSD storage drive minimum	Storage size should be dependent on your needs. Keep in mind that 5TB of space is available through OneDrive.
<b>Network</b>	Wi-Fi 6 (802.11ax) minimum	Necessary to connect to campus Wi-Fi
<b>Video card</b>	4GB minimum dedicated memory DirectX® 10.1 or above compatibility Supports 8x antialiasing	Discrete graphics by NVIDIA or AMD are preferred over integrated options. However, newer integrated graphics by AMD (760/780M) or Intel (ARC 7/8) may still meet minimum requirements.
<b>Ethernet port or adapter</b>	10/100/1000BASE-T Gigabit Ethernet	Ethernet available in residence for use

Make	Models	Website
<b>IBM/Lenovo</b>	Lenovo Yoga Pro Series	<a href="https://www.lenovo.com/ca/en/c/laptops/yoga/yoga-pro-series/">https://www.lenovo.com/ca/en/c/laptops/yoga/yoga-pro-series/</a>
<b>Dell XPS</b>	XPS series	<a href="#">Dell Canada: Dell XPS Laptops - High Performance Notebooks</a>
<b>Asus</b>	Asus ZenBook 15 Series	<a href="#">Zenbook Pro 15 UX535</a>   <a href="#">Laptops For Home</a>   <a href="#">ASUS Canada</a>



## Recommended Supplementary Purchases

Hardware component	Specification	Comments
<b>Extended Warranty (Highly recommended)</b>	3-year premium warranty for your device.	A recommended part of any laptop purchase, which ensures a greater return on investment.
<b>Mouse</b>	Multiple buttoned mice with scroll wheel.	Having a mouse that can use macro can aid in productivity and efficiency.
<b>Separate Screen</b>	Larger resolution display screen (24-27inch)	A recommended purchase for productivity and efficiency.
<b>USB-C Hub</b>	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.
<b>USB 3.0 Flash Drive, or Thunderbolt/USB external Hard Drive</b>	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.
<b>Headset</b>	USB/Bluetooth with Mic	Noise cancelling mic may help in meetings and interviews.
<b>Laptop Stand</b>	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 Civil 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
<b>Windows 10</b>	Windows 10 is provided free of charge to UW students. Activate your account at: <a href="http://uwaterloo.onthehub.com">http://uwaterloo.onthehub.com</a> using your WatIAM username and password.
<b>Office 365</b>	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. You can have Activate your account at <a href="https://uwaterloo.ca/office-365">https://uwaterloo.ca/office-365</a> using your WatIAM username and password.
<b>AutoCAD</b>	AutoDESK is available free of charge to UW students for Microsoft platforms. Activate your account at <a href="#">Autodesk Education &amp; Student Access   Autodesk</a>

## Optional Software

Optional Software	How to obtain
<b>Adobe Creative Cloud</b>	Available in <a href="#">Adobe - WStore</a> .
<b>OneDrive</b>	OneDrive is provided free of charge to UW students for Microsoft platforms and offers 5TB of cloud storage. Activate your account at <a href="https://uwaterloo.ca/office-365">https://uwaterloo.ca/office-365</a> using your WatIAM username and password.
<b>Azure for Education</b>	Students receive developer tools from Microsoft at no cost. This includes software such as Project, Visio and operating systems. For access sign in here: <a href="#">Azure Dev Tools for Teaching (microsoft.com)</a>

**NOTE:** We strongly encourage students NOT to purchase Adobe Creative Cloud prior to starting Civil 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 as well as hardware and software support for all department-level computing facilities. Application-level support for course software is not provided, but direction to the proper people for support is provided to students. You can also email [civrt@uwaterloo.ca](mailto:civrt@uwaterloo.ca) for help.
- **Faculty of Engineering Computing Support**  
[Home | Engineering Computing | University of Waterloo \(uwaterloo.ca\)](#)
- **Campus-Wide Information Technology Support**  
[Home | Information Systems & Technology | University of Waterloo \(uwaterloo.ca\)](#)

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

## 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 Us](#)