LaurentianUniversity
UniversitéLaurentienne

McEWEN SCHOOL OF ARCHITECTURE
ÉCOLE D'ARCHITECTURE

| Computer and software requirements

The computer is a crucial tool in architecture and all students must buy (no latter than the start of the 2nd year in the BAS) a professional-grade computer that meets the **minimum requirements**, including all **mandatory software** and **accessories** as per the specifications listed below. Incoming 1st year students can also refer to this appendix in preparation for second year studies.

When selecting a computer, please ensure it is powerful enough to support the demanding computational requirements of specialized software necessary for studio coursework, 3D modeling, fabrication and graphic design. This important investment will significantly affect your capacity to do the work efficiently and rapidly.

The MSoA **recommends buying a laptop** instead of a desktop. The mobility and flexibility of owning a laptop is critical to architectural studies as coursework is often delivered in groups and tutorials are provided in various locations (i.e. studio space, the CLT classroom, fabrication lab, etc.). A desktop is permitted, however it must remain in studio and locked to the student's desk. Please note that it is mandatory for students to have their computers on hand during studio sessions.

MINIMUM computer requirements:

| *Intel* i7 Quad Core processor
| *Windows* 10 x 64
| 16 GB of RAM
| Dedicated video processor should be one of the following **or greater**: Nvidia® Quadro®, Nvidia® Geforce 950 M, 1050 M, AMD Radeon R9 M370X, Radeon Pro 555/560, AMD FirePro M4000 Mobility Pro
| 500 GB hard drive (Solid State (SSD) hard drive preferred)
| Wireless

Recommended:
| Three-year warranty
| Theft and damage insurance

Please note: Although the choice remains yours, we advise against purchasing a *MacBook Pro* for architectural studies. Many students have regretted this decision in the past as the majority of software used in architecture are *Windows* specific and students find themselves working in the *Windows* OS the majority of the time. Furthermore, RAM and hard drives cannot be replaced or upgraded in a *MacBook Pro* because they are soldered into the motherboard. After four years of architectural studies, *MacBook Pro* users are left with a non-upgradeable and a slower computer than those with a more flexible, *Windows*-branded laptop.

Option 1 – Laptop: *Lenovo ThinkPad P Series* (Mobile Workstation):
Laurentian's Service Desk is an authorized service provider of *Lenovo* laptops and provides free support for student owned *Lenovo* computers. To meet the hardware requirements for architectural studies, we recommend any of the *Lenovo Thinkpad P series* laptops, each of which can be customized to meet the minimum requirements above.

+/- $2,000 (including taxes and shipping) to meet the minimum laptop requirements

Option 2 – Laptop: *Apple MacBook Pro*:
Laurentian service desk is also an authorized service provider of *Apple*'s *MacBook Pro* and accordingly provides free support for student owned *MacBook Pro* laptops. To meet the hardware requirements for architectural studies, we can only recommend the highest model of *MacBook Pro*, the 16" version. All other models (i.e. 13") are equipped with less powerful graphic cards and are not suitable to run 3D software and/or processing complex architectural models.

+/- $3,300 (including taxes and shipping) to meet the minimum laptop requirements

Option 3 – Any computer that meets the minimum requirements identified above:
Laurentian's Service Center will provide free support to any student owned computer user however they are only authorized to service *Lenovo* and *Apple* products. If you select a laptop, keep in mind that the lighter and more compact, the greater the cost. A popular option for students is a gaming laptop. This is a viable option if the specs above are followed. Although less expensive than workstation branded laptops (i.e. *Lenovos*) they tend to have a lower build quality.

Accessories requirements:
The following accessories are **required** for all students to maximize efficiency and comfort:

Mandatory accessories:
| Mouse (cordless or corded – two buttons and a scroll wheel is sufficient) $20-40

Highly recommended (optional for health and comfort):
| Computer monitor (24" or larger, many options available for $175-250)
| Headphones (earbuds are fine, but over-ears or on-ear are more comfortable) $40-75

Software requirements:
Students have access to the MSoA Computer Lab, which is equipped with many computers and a range of software. However, there is a limited availability of computers at any point in time due to the number of students. This is a support resource and students should have the fundamental architecture software on their computer to easily and efficiently do their work. It is thus **mandatory** that each student downloads a copy of the following software and has it installed on their computer prior to the beginning of the academic year:

Mandatory Software:

| *Adobe Creative Cloud* – At minimum, Photoshop, Illustrator, Acrobat Pro, Premiere and InDesign (provided to Laurentian University students for free)[1]
| *Office 365 Education* (available to students for free)[2]
| *Rhino 6* (around $190 for permanent use for students)[3]
| V-Ray (around 150$/year for students (Edu Collection))[4]

Recommended (optional)
| Revit (available to students for free (limited educational license))[5]
| AutoCad (available to students for free (limited educational license))[6]

1 (*students will receive an email from IT to configure their account, so they can then go to Adobe.ca, connect with Google (Laurentian University email address) and download **PhotoShop**, **Illustrator**, **Acrobat Pro**, **Premiere** and **InDesign***)
2 (*https://www.microsoft.com/en-ca/education/products/office*)
3 (*look for Rhino 6 for Mac and Windows – Educational Student License on https://www.rhino3d.com/en/sales/north-america/Canada*)
4 (*https://store.chaosgroup.com/educational/product/1-year-term-vray-edu-collection*)
5 (*https://www.autodesk.com/education/free-software/revit*)
6 (*https://www.autodesk.com/education/free-software/autocad*)

The abovementioned software is specialized costing thousands of dollars in a professional setting and is protected by copyrights. It is thus crucial that students install the **official** educational (or professional) licenses and do not download illegal copies.

Resources:
http://www.velocitymicro.com/blog/geforce-vs-quadro-whats-the-difference/
https://www.lenovo.com/ca/en/laptops/thinkpad/thinkpad-p/c/thinkpadp?menu-id=Thinkpad_Workstations
https://www.apple.com/ca/macbook-pro/

Students entering the 1st year of the undergraduate program who wish to wait before buying their new architecture computer can rely on the Computer Lab at the McEwen School of Architecture (equipped with shared desktop computers and specialized architecture software, accessible at all times) and/or can use an existing personal computer, equipped with the following **mandatory accessories** and **mandatory software**. Indeed, personal computers are adequate to complete assignments in first year, as courses do not require many specialized software, putting instead the emphasis on hand drawing and handcrafting.

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2 (https://www.microsoft.com/en-ca/education/products/office)
3 (look for Rhino 6 for Mac and Windows – Educational Student License on https://www.rhino3d.com/en/sales/north-america/Canada)

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