NYU TANDON SCHOOL OF ENGINEERING

LAPTOP REQUIREMENT GUIDE

STUDENT LAPTOP PROGRAM REQUIREMENTS

WHAT ARE THE REQUIREMENTS OF THE NYU TANDON SCHOOL OF ENGINEERING'S LAPTOP PROGRAM?

The NYU Tandon School of Engineering requires that all students without exception have an appropriate laptop computer when they commence classes and for the duration of their matriculation.

Your laptop is an integral and invaluable tool in your education at the School. Therefore, you must have a laptop that can support the required software of the School's academic program by the first day of classes.

This document will discuss how to meet the requirements of the NYU Tandon School of Engineering's Laptop Program.

REQUIRED OPERATING SYSTEM

As most of the Engineering applications are Windows-based, we highly recommend that a Windows laptop be used for your studies at the NYU Tandon School of Engineering. As such, we are requiring the Windows 10 operating system be installed.

NOTES FOR APPLE MACBOOK BUYERS:

Even though the Windows OS is a requirement for this program, students who prefer to purchase an Apple MacBook to meet the laptop requirement can certainly do so. However, you must have some version of the Windows OS installed on your MacBook to run the required software.

You can run Windows on a Mac in one of two ways: (1) Boot Camp utility — it lets you run Windows & Windows-based apps on a separate partition of your hard drive OR (2) Virtual software — software such as Parallels, VMware Fusion, Sun Virtual Box, etc. allows users to run Windows & Mac apps at the same time.

Additional information about using Boot Camp and the specific requirements can be found on the Apple website (http://support.apple.com/kb/HT1461).

FINANCIAL INFORMATION

Federal regulations allow students and/or parents to borrow loans to assist in the financing of computers and required software. After purchasing your computer and/or software, if you wish to obtain a student loan to receive reimbursement for the initial outlay of funds, please provide the Office of Financial Aid with a copy of your receipt at the time of the loan application. If you have any questions you may contact the Office of Financial Aid at financial.aid@nyu.edu.

RECOMMENDED HARDWARE SPECIFICATIONS

When purchasing a new computer, you're making an investment in something you'll most likely be using throughout your four years at the NYU Tandon School of Engineering. With this in mind, please carefully consider the following advice: though some items involve greater initial cost, they may save you money over time.

	MINIMUM HARDWARE SPECIFICATION	RECOMMENDED HARDWARE SPECIFICATION
Processor	Intel® Core™ i5 CPU (current generation)	Intel® Core™ i7 CPU (current generation)
Memory	8 GB DDR-RAM	16 GB DDR-RAM (or more)
Storage	500 GB SATA or 256 GB SSD HDD, DVD-RW/DVD Combo Drive	1 TB SATA or 512+ GB SSD HDD, DVD-RW/DVD Combo Drive
Network/Communications	Integrated 802.11a/c wireless, Integrated Gigabit Ethernet, USB 3.0 ports	Integrated 802.11a/c wireless, Integrated Gigabit Ethernet, USB 3.0 ports
Power	Lithium-ion battery (6 hr capacity/3 cell battery)	Lithium-ion battery (10 hr capacity/9 cell battery)
Operating System	Windows 10	Windows 10
Warranty	3-yr Warranty and Accidental Protection	4-yr Warranty and Accidental Protection

Points to consider:

- A one year warranty is often the standard warranty. If possible, consider purchasing an extended warranty to avoid potentially costly repairs after the warranty expires or the need to replace the laptop.
- Warranties only cover defects in the laptop, but not theft or damage due to accidents. You may wish to consider an extended warranty that includes accidental damage and / or theft insurance coverage.
- Software requirements for hardware performance, memory, and storage can be expected to increase across the span of your academic career at the NYU Tandon School of Engineering. Purchasing a laptop with a "higher end" specification will more likely provide greater utility over time.
- Better laptops provide a metal alloy composite casing to better protect their LCD displays and other internals. LCD displays can be very costly to replace. Thus, we recommend you purchase a laptop with such a casing.
- Your selection of features above the minimum configuration should be based upon your own preferences and plans. In some cases, you may be planning an upgrade at a later date.
- Purchase a laptop lock that you can use to secure your laptop should you step away from it.
- Purchase a laptop case or laptop bag specially designed to store and protect your laptop either independently or in a separate compartment.

RECOMMENDED SOFTWARE FOR 1ST YEAR STUDENTS

All incoming undergraduate first-year students are required to have the following software installed on their laptops by the first day of classes:

- Microsoft Office*
- Python
- LEGO Mindstorms
- MATLAB
- Anti-virus software with maintained virus definitions

*Microsoft Office is not required but strongly recommended given its level of adoption within the NYU Tandon School of Engineering.

WHAT OPTIONS EXIST FOR OBTAINING REQUIRED SOFTWARE?

There are two options for obtaining required software:

OPTION	EXPLANATION
Obtain the software for $225 from the NYU Tandon School of Engineering's Laptop Help Desk	The NYU Tandon School of Engineering's Laptop Help Desk will load on your laptop a software package bundling, not only the required software, but additional productivity software for a fee of $225. The software package includes the following: Microsoft Word Microsoft Excel Microsoft Outlook Microsoft PowerPoint Microsoft Publisher Microsoft Access Microsoft Project Microsoft Visio Microsoft Visual Studio LEGO Mindstorms MATLAB Symantec Endpoint Protection
Access the software via the NYU Virtual Computer Lab (VCL)	The NYU Virtual Computer Lab (VCL) allow students virtual access to most NYU-licensed academic software applications. The service is free and works on both Windows and Mac computers. VCL is accessible using a web browser and no software installation is needed locally on your computer. For additional information about accessing VCL, go to the link below: https://www.nyu.edu/its/vcl/

ADDITIONAL RECOMMENDED SOFTWARE

Depending on your academic program and the courses you take, you may be required to purchase additional software packages later on such as the following:

- AutoCAD
- Additional "toolboxes" for MATLAB

The cost of such later requirements will generally be comparable to the cost of a textbook. Whenever possible, you can make use of any software discounts or group licenses that the NYU Tandon School of Engineering has arranged.

FREQUENTLY ASKED QUESTIONS

I ALREADY HAVE A LAPTOP. CAN I USE IT INSTEAD OF PURCHASING A NEW LAPTOP?

If your current laptop meets or exceeds the minimum hardware configuration mentioned in this guide, then you do not need to purchase a new machine. However, as new software is released and required in your coursework, you may need to upgrade or replace your laptop.

WHAT CAN BE INCLUDED IN THE ESTIMATED COST OF EDUCATION FOR LOANS AND FINANCIAL AID?

The costs of hardware and software purchased in order to meet the laptop program requirements may be included in the estimated cost of education for loan and financial aid considerations. For more information, please contact the Office of Financial Aid at financial.aid@nyu.edu.

WHAT IS THE RATIONALE BEHIND THE MINIMUM AND RECOMMENDED HARDWARE REQUIREMENTS?

- **CPU:** The Intel® processor is widely used in laptop computers. If you choose a laptop with a different CPU, be sure to pay attention to expected battery life and its performance in industry-standard benchmarks.
- **Display:** You'll be spending a lot of time looking at your laptop's display, so quality is an important issue. In general, the larger the size and the higher the resolution, the better. On the contrary, the display size is more like a personal preference. A larger screen size will add more weight and make the laptop less portable.
- **Memory:** The current versions of the Windows OS are designed to handle a large amount of main memory, and recent experience has shown that with the desire to run multiple applications at once and the increased use of streaming video and digital music, more memory means better performance. Given the current pricing for main memory, 8GB is the minimum you should consider.
- **Hard Drive:** Given the growing use of streaming audio, video and multimedia applications, the general rule of thumb is "the bigger the better." We recommend having at least a 500 GB SATA or 256 GB SSD hard drive. Additionally, you should invest in an external USB hard drive for more storage and backup purposes.

  Solid State Drives (SSD) are another viable alternative in lieu of a traditional hard disk drive. SSDs are more durable, use less power and are quicker to boot up, transfer files, and launch applications in comparison to a regular HDD. Currently, SSDs are more expensive per gigabyte of storage compared to a HDD. You'll need to decide whether having a SSD is worth the extra cost now or wait to upgrade at a later time.
- **CD-RW/DVD Drive:** An optical drive is useful if you still prefer to watch DVD movies on the laptop or write to a DVD disk. It is also a nice option to have in case you need to create a bootable disk when needed. Most laptops come with an internal optical drive but you can opt for an external one if you only need to use it occasionally.

- **Wireless:** Students will have the ability to connect to NYURoam, NYU's secure wireless network at the Brooklyn campus and other NYU locations. To connect at optimal speeds, your laptop must support the IEEE 802.11 a/c standards and WPA Enterprise or WPA2 encryption.
- **USB:** A typical laptop these days has a combination of both USB 2.0 & USB 3.0 ports installed. USB 3.0 is the latest standard. Most computers and devices being manufactured today support USB 3.0. The data transfer rate is 10 times faster than a USB 2.0 and it is backwards compatible with USB 2.0 drives/devices. As the popularity of USB devices and use increases, it is recommended to purchase a laptop with multiple USB ports and you should consider getting USB 3.0 exclusively.

  USB Type C (USB-C) is the emerging standard for charging and transferring data. Currently, you can find them in the newest laptops, phones and tablets. USB-C features a new, smaller connector shape that is reversible to make it easier to plug in. Since the connection can carry significantly more power, it can be used to charge different devices like laptops, phones and tablets. The transfer speed of a USB-C connection is 10 Gbps, which is double the rate of a USB 3.0. While the physical USB-C connector is not backwards compatible with USB 2.0/3.0 devices, you can still connect older devices by using an adapter that has a USB-C connector on one end and a larger USB 2.0/3.0 port on the other end. Eventually in the near future, USB-C connectors will probably be the norm and will replace the current USB technology.
- **Battery:** This is one of the most critical parts of your laptop. Many students like to work in places where there is no electrical power (e.g. coming in on the train or subway in the morning, sitting in the park outside Rogers Hall), so having a good battery is extremely important. Lithium Ion technology currently has the greatest battery life. In fact, you might consider buying a booster battery as well. After you acquire your laptop, be sure to read the manual on how to prolong battery life, and follow the manufacturer's recommended practices.
- **Case:** A metal alloy case is extremely desirable. Students usually keep their laptops in a backpack or similar arrangement, and have damaged their displays due to pressure on the case of the laptop. A metal alloy case will resist this damage more effectively. In addition, there are slip cases you can buy for your laptop in computer accessory departments which may help minimize this damage. Buying a laptop with a normal plastic case and putting it in a case with other items (e.g. textbooks) is not practical.

MORE QUESTIONS?

- **For questions about the laptop requirement or other technical matters**, please send an email to soehelpdesk@nyu.edu. Make sure to check the Information Systems website for updates at the following website:

  http://engineering.nyu.edu/services/information-technology-systems/laptop

- **For questions related to any other aspects of your admission or the NYU Tandon School of Engineering's academic programs**, please contact the Admissions Office at advisement@nyu.edu