2019-2020 Computer Specifications

For the Class of 2023

Required laptop specifications for freshmen students entering the Bagley College of Engineering in the fall of 2019 have been established. Based on our years of experience with our laptop requirements, we do not recommend students purchase laptops until mid-June or early-July. This provides adequate time to order and receive the laptop.

Students who are transferring from another institution are only required to meet the computer requirements in effect at the time they were freshmen.

Requirements for 2020-2021 academic year will be posted in the summer of 2020.

Minimum Configuration

These specifications are only for freshmen entering school during the fall 2019 semester.

Transfer students should follow the specifications in place at the time they were freshmen.

Notes on Purchase of a Laptop

The information provided below is sufficient for you to purchase a laptop. We are not able to review individual systems, provide additional guidance on suggested vendors, or tell whether or not a specific model will work. If the laptop meets or exceeds the specifications below, there should be no issues. Please note the recommendation against purchasing Macs for engineering work. This is not bias but is based on experience. If you chose to ignore our recommendations, you do so at your own risk.

Microsoft Windows Laptops

Minimum Hardware Specifications

Laptop computer

Intel Core i5 processor or equivalent

8 Gb RAM

500 Gb Hard drive

Video screen with resolution of 1600 x 900 is encouraged (higher resolution, 1920 x 1080, strongly encouraged, especially for those who think they may make extensive use of CAD software). Computers with 4K displays may have to be operated at a lower screen resolution to be compatible with some software used. Students planning to major in Aerospace, Biological, Biomedical, or Mechanical Engineering will make use of SolidWorks. There have been some reported issues of graphics cards not being compatible with this program. It is possible an updated version of the program will address this issue. For now, those ASE, BE, BME, and ME affected students may want to consult http://www.solidworks.com/sw/support/videocardtesting.html for a list of tested and certified graphics cards for SolidWorks.

IEEE 802.11 wireless capability (ac, g, or n are the most commonly used, a and b are not supported).

Ethernet (network) card

1 Gb minimum USB Flash Drive (thumb drive, memory stick, etc.) to allow easy transfer of files between computers

Required Operating System (OS)

Microsoft Windows 10 or higher.

Required Software

All students will need access to Microsoft Office including Word, Excel and PowerPoint. Industrial and systems engineering students will also need to have Microsoft Access. MSU students are able to download Microsoft Office 365 from our ITS website and use it free of charge as long as they are enrolled students.

Students must have anti-virus software installed on their computers. Windows Defender, which comes with Microsoft Windows, is preferred.

Recommended Optional Equipment

Students are strongly encouraged to purchase an external, portable hard drive which can be used for computer backups and storage of large files. These are reasonably priced and available in various capacities. Additionally, students may want to subscribe to an on-line service such as DropBox, Carbonite, or others to use for backing up files. We cannot over-emphasize the importance of performing regular backups of important documents and keeping your backup in a separate location from your laptop. Should your laptop be lost or damaged, you will still have your important documents on your portable hard drive, which

could then be used on another computer until yours is replaced or repaired. Lost or damaged laptops are not acceptable excuses for missing assignments.

We do not have specifications for printers. There are facilities on campus that will allow students to print, or students can purchase any printer of their choice from the multitude of vendors available. When/if purchasing a printer, remember to factor the cost of toner or ink into the total cost of ownership.

Suggested Vendors

Through a special partnership agreement, the Bagley College of Engineering has worked with Dell to provide discounted pricing on Dell laptops that meet or exceed the college requirements. By clicking on the link below, you will be directed to a website that will allow you to select and customize a Dell laptop. This is provided as a service to our students and prospective students. It is not required that you purchase a Dell. Click here to access your Premier Dell.com site.

Be sure to review the minimum laptop specifications. If you have questions or experience any problems with Dell's pages, please call Dell at 1.866.257.4711.

Another option for computer purchases would also be HP. Click here to visit HP's MSState page. Again, it is not required that you purchase a Dell or an HP computer, this is just an option that we share here as a service to our students.

Apple Macintosh Computers

The Bagley College of Engineering does not recommend engineering students use Apple Macintosh computers due to the incompatibility of some required engineering software that is not available in Mac OS versions. However, some students already have Apple Macintosh computers or wish to purchase one. If you choose to use a Mac, it must meet the minimum specifications below and note that it will be more expensive than a Windows-only machine.

Support for Macs is limited on campus. The Bagley College of Engineering will not be able to provide assistance to any student who is running a pirated, borrowed, or bootlegged copy of Windows. It is fairly easy to purchase a software bundle which includes both Parallels Desktop 13 and Windows 10. The technicians must be able to verify that the version being used is legally purchased. You should preserve your purchase receipt as well as your installation key to prove the legality of the software should any question arise. These receipts can be can scanned and maintained on your computer.

Apple Mac Minimum Hardware Requirements

MacBook Pro

Intel Core i5, or higher. Non-Intel processors are not acceptable.

16 Gb RAM

500 Gb Hard drive

Minimum screen size of 13 in. (15 inches is probably better or access to an additional monitor). See note under Windows machines for SolidWorks compatibility.

IEEE 802.11 wireless capability (ac, g, or n are the most commonly used, a and b are not supported).

Ethernet (network) card

1 Gb minimum USB Flash Drive (thumb drive, memory stick, etc.) to allow easy transfer of files between computers

Required Operating System (OS)

macOS Mojave (10.14.4) or later. For security reasons, we encourage students always run the latest version of the Operating System

Additional Required Software in Addition to macOS

Virtualization software (please choose only one):

- Parallels Desktop 14 for Mac parallels.com
- VMware Fusion 11 for Mac http://www.vmware.com/products/fusion.html

Microsoft Windows 10 or higher

Some vendors such as Amazon sell bundles of Parallels Desktop or VMware Fusion with a copy of Windows. Borrowed or pirated copies of Windows (or any software) is not permitted.

Although there are other dual-boot systems available (BootCamp and Virtualbox Fusion for example), our faculty have found that Parallels Desktop or VMWare Fusion works best for the software we use and they are the only systems that will be supported by the college.

Other software that you will use in class will be provided to you at the appropriate time. Microsoft Office is available through the university. It can be obtained through MSU by following the instructions found at https://servicedesk.msstate.edu.

Students must have anti-virus software installed on their computers. There are several programs available for Mac OS, and students should use one they prefer.

Recommended Optional Equipment

Students are strongly encouraged to purchase an external, portable hard drive which can be used for computer backups and storage of large files. These are reasonably priced and available in various capacities. Additionally, students may want to subscribe to an on-line service such as DropBox, Carbonite, or others to use for backing up files. We cannot over-emphasize the importance of performing regular backups of important documents and keeping your backup in a separate location from your laptop. Should your laptop be lost or damaged, you will still have your important documents on your portable hard drive, which could then be used on another computer until yours is replaced or repaired. Lost or damaged laptops are not acceptable excuses for missing assignments.

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Vendors

Apple computers may be purchased either in Apple Stores or on-line at http://www.apple.com/us-hed/shop. If purchasing in an Apple Store, let the sales person know that you are purchasing the computer for college and you may receive a discount.

Warranty, Loss, Theft, and Accidental Damage Insurance

Students should consider the cost of purchasing an extended warranty as well as additional insurance for their investment in their computer. Warranty's do not generally cover accidental damage (such as spills or drops). Many Homeowners insurance policies will cover loss and theft of a computer in many cases but you should ensure that your specific policy does cover loss of theft if the computer is at school. It may be possible to add riders to a homeowner's policy to include accidental damage at slight additional cost.