2025-2026 Computer Minimum Specifications

For the Class of 2029

Required laptop specifications for freshmen students entering the Bagley College of Engineering in the fall of 2025 have been established. Based on our years of experience with laptop requirements, we recommend students wait to purchase laptops until mid-June or early-July. This provides adequate time to order and receive the laptop.

For Transfer Students

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

Specification Update Schedule

Requirements for 2026-2027 academic year will be posted in the summer of 2026.

Notes for the 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 these recommendations, you do so at your own risk.

Microsoft Windows Laptops

Minimum Hardware Specifications

- Laptop computer
- Intel Core i5 processor* or AMD Ryzen 5 (faster processing speeds are recommended)
- 16 GB RAM
- 1 TB SSD (solid state) hard drive
- 15 in. screen
- Camera capable of supporting web conferences.
- Video screen with resolution of 1920 x 1080. 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 (ASE), Biosystems (BSE), Biomedical (BME), or Mechanical (ME) 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 **https://www.solidworks.com/support/hardware-certification** for a list of tested and certified graphics cards for SolidWorks.

- Wifi 4 (IEEE 802.11n) wireless capability or higher
- Students will need a USB-to-Ethernet adapter or an Ethernet port integrated in the laptop. Most modern laptops do not come with an Ethernet port integrated into the laptop. In these cases, the USB adapter is a cost-effective solution.
- 1 GB minimum USB Flash Drive (thumb drive, memory stick, etc.) to allow easy transfer of files between computers.
  * Note about Intel i5 or equivalent processors: The i5 descriptor on computer processors has been in effect for many years now. Your computer should have a 10th generation i5 processor or higher as a minimum. The generation is usually indicated by the first couple of digits in the processor code (for example: i5 10500H would be a 10th generation processor while i5 6500T would be a 6th generation processor). For processors from other manufacturers, such as AMD, ITS suggests your computer have one comparable in power to a 10th gen i5, such as the AMD Ryzen 5, or better.

Required Software

- Microsoft Office. 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. Through the Microsoft Student & Teacher Advantage Program, active students are entitled to install Microsoft Office on up to five personally-owned laptop and desktop computers at no cost. For more information, visit **https://servicedesk.msstate.edu/TDClient/KB/ArticleDet?ID=1353**.
- Windows 11. As part of the MSU Microsoft EES agreement, current MSU students can download a copy of Windows 11 Education Operating System at no cost. For more information, visit https://servicedesk.msstate.edu/TDClient/KB/ArticleDet?ID=1620.
- Information on supported operating systems in Solidworks can be found at https://www.solidworks.com/support/system-requirements.
- Antivirus software. Students must have anti-virus software installed on their computers. Windows Defender, which comes with Microsoft Windows, is preferred.

Suggested Vendors

The following list of vendors are provided as a service to our students and prospective students. It is not required to purchase a computer from these vendors.

- Dell provides a website with educational pricing. **Click here to access Dell's educational pricing site**. If you have questions or experience any problems with Dell's pages, please call Dell at 1.866.257.4711.

- HP provides a website with education pricing. **Click here to access HP's educational pricing site**.

Be sure to review the minimum laptop specifications.

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 Mac Computers and ARM-based Systems

Currently, there is software used within the Bagley College of Engineering that is incompatible with Apple Mac computers with M1, M2 or M3 chips (Apple Silicon) and ARM-based computers. There is no workaround as of the publishing of these specifications. Due to this, Bagley College of Engineering strongly recommends that students ***DO NOT*** purchase Apple computers with an Apple Silicon (M1, M2 or M3) processors or computers with ARM-based processors with the expectation of using them for coursework within the college of engineering.

Those who have Apple Mac computers with Intel processors can use them to run this software by installing emulation software. Please see the 2021-2022 specifications for information on this.

If you have already purchased an Apple computer with an Apple Silicon processor or a computer with an ARM-based processor, you may be able to use it your freshman year. If you are a transfer student, you may be able to use it depending on your major and the specific courses you are taking. You will need to discuss this with your departmental academic advisor.

Additional Resources

Data Backup

Students are strongly encouraged to have a method for backing up data on their computer at regular intervals.

Students can 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.

Enrolled MSU students have access to Microsoft OneDrive with 5TB of online storage. Information for using this service and syncing with personal computers can be found at **https://servicedesk.msstate.edu/TDClient/KB/ArticleDet?ID=1521**.

Additionally, students may want to subscribe to an on-line backup service such as Backblaze, Carbonite, or others to use for automatically backing up files.

We cannot over-emphasize the importance of performing regular backups of important files and keeping your backup in a separate location from your laptop. Should your laptop be lost or damaged, you will still have your important files on your external data source, 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.

Printers

The Bagley College of Engineering does not set specifications for printers and there is no requirement for a student to own one. There are facilities on campus that will allow students to print for a fee, 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.