



Computer Requirements for Bachelor of Science Students

Like anyone skilled in a craft, data science experts learn to use certain tools. In your case, these tools will be programming languages, data storage and retrieval technologies, and other software libraries required to interact with data, draw knowledge from data, communicate with others, and use data to train artificially intelligent systems. These tools will live in a toolbox, your laptop computer, but they will also allow you interact with external computing resources to process complicated, demanding workloads.

Your laptop will become as useful to you as well-equipped woodshop is to a woodworker. The work you do will not only build your skills but, over the course of your time at MSU, contribute to a growing collection of useful code that you can use throughout your career. With these goals in mind, it is important to consider several values when purchasing a laptop that fits with your lifestyle as a student. You will carry this laptop from class to class, thus portability, weight, and battery life become very important. You will be using this laptop for at least four years, and so high-quality components and ruggedness will be cheaper in the long run than purchasing several discount-store quality laptops over your time in college. You will be using this laptop for processor and storage intensive work, so you want to be sure it has a fast processor, has enough short-term memory (RAM) to handle in-memory data work, and enough fast storage (solid state hard drive) to download, store, process, and generate large amounts of data. Finally, you will be using this computer for other purposes – videoconferencing, watching assigned online videos, word processing, and using spreadsheets. Thus, you will want to have a front-facing camera and be able to run Microsoft Word, Microsoft Excel, and other common commercial software products.

The following minimum requirements will be helpful if purchasing used equipment, but most new computers will exceed these. Generally, if you can afford a faster processor and additional RAM, go for it—you will appreciate the additional power this will give you.

Processor:	Intel Core i5 or better. The new Apple-designed M1 and M2 processors are also great choices.
Memory / RAM:	16GB
Hard Disk:	500GB (solid-state drives preferred)
Operating System:	Microsoft Windows (>= 11) or Apple OS X (>= Monterey)

Chromebooks are not recommended.

While these specifications will meet the requirements of Data Science courses at MSU, courses in other departments, including courses required uniquely within student concentrations, may have specialized requirements. We recommend reading through the requirements provided by other colleges and by Mississippi State Information Technology Services:

<https://servicedesk.msstate.edu/TDClient/45/Portal/KB/ArticleDet?ID=1195>

If you are in doubt about a particular laptop's suitability, please email info@datascience.msstate.edu and we can help you think through the purchase.