

Recommended Hardware Specs for Time/Motion Arts

Depending on your student's focus in the Animation and Game Arts or Immersive Experience Design majors, you will want a device that can handle the software(s) being used. Below, a non-exhaustive guide to help you begin looking at the right direction for laptop specifications based on area of focus. A general bit of advice would be to purchase the highest specification of laptop within your budget – technology changes at a pace that at times can be unpredictable, but purchasing with some futureproofing in mind can allay some of those issues.

Tablets, Chromebooks, All-In-One devices, and laptops below the specs listed here should generally be avoided as they tend to be mostly incompatible with the industry-standard software used at Moore.

Here are some helpful websites to learn more about computer parts and what would work best for your student:

- <https://www.logicalincrements.com>
- <https://www.newegg.com/tools/laptop-finder>
- <https://www.choosist.com/us/laptops/start>

Area of Focus	Software(s) Used	What Specs Matter the Most?	How Much of Each Spec Do I Need?	What are some Extra Things to Consider?
2D Animation	• Adobe Creative Suite (Mostly Photoshop, Premiere Pro, and After Effects) • ToonBoom Harmony • Unity Game Engine	Most of these programs benefit from multi-core CPUs, which allow them to handle multiple process demands. Memory (RAM) also allows the device to handle	CPU • Minimum: A multicore 64-bit CPU for PC, M1 or higher for Mac • Recommended: At least a 4-core 64-bit CPU with multithreading. 8-cores is the sweet spot and is becoming the industry	• 2D animation software works well on both Mac or PC platforms. • Premiere Pro and After Effects will be the most hardware-intensive programs your computer will run. If you see yourself being into the video editing or visual effects side of things and wants to plan ahead, getting a computer spec'd toward that goal will have you set

		multiple programs simultaneously – the more, the better. Storage is how files are saved, and having enough ensures students do not need to delete files to make room for new work.	standard. On the Mac side of things, M1 Max is fantastic. RAM • Minimum: 4 GB is the technical minimum for most of the software, although in practice 8 GB is as low as you’d want to be to be able to use the software. • Recommended: 16 GB will ease workflow and rendering times, and allow students to move through the programs with minimal lag. GPU • Minimum: A 3000 series Nvidia GPU, or a 6000 series AMD GPU. For Apple, M1 or higher. • Recommended: 4000 or 5000 series Nvidia GPU, or a 7000 or 9000 series AMD GPU. For	for everything else 2D animation. • Consider investing in a portable external SSD for backing up all of your files. Samsung and WD are two highly recommended brands. • Consider investing in a drawing tablet to use in tandem with your laptop. Wacom, XP-Pen, and Huion are all trusted and reputable brands.
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			Apple, M2 Pro or higher. Storage • Minimum: 256 GB • Recommended: At least 1 TB – this should last for the student’s 4-year stay at Moore, or very close to it. A portable external SSD is also highly recommended as a way of moving data, backing up work, and offering an alternative device to work directly from.	
3D Animation	• AutoDesk Maya • Unreal Game Engine • Adobe Creative Suite (mostly Photoshop, After Effects, and Substance Painter) • Maxon Z-Brush	CPU will really matter here, as these programs are compute heavy. Multi-core CPUs are ideal. The graphics card (GPU) will also be very important, even moreso than the CPU, as the visual fidelity and ability to render work	CPU • Minimum: 4-Core CPU, 64-bit • Recommended: 8-core CPU, 64-bit with Multithreading RAM • Minimum: 8 GB of RAM • Recommended: At least 16 GB of RAM, 32 GB if budget permits will	• 3D Animation can be done on Mac or PC, but the programs tend to run better natively on PC. • Z-Brush, Substance Painter, and Unreal Engine will be the most taxing on your device. When in doubt, go as high in the recommended specs in your budget will allow. This device will not only work well for 3D animation; it will excel for 2D animation and even likely have decent gaming capabilities.

		will rely on the amount of RAM the GPU has (called VRAM). Storage is how files are saved, and having enough ensures students do not need to delete files to make room for new work.	ensure the smoothest experience. GPU • Minimum: A 3000 series Nvidia GPU, or a 6000 series AMD GPU. For Apple, M1 or higher. • Recommended: 4000 or 5000 series Nvidia GPU, or a 7000 or 9000 series AMD GPU. For Apple, M2 Pro or higher. Storage • Minimum: 500 GB • Recommended: At least 1 TB – this should last for the student’s 4-year stay at Moore, or very close to it. A portable external SSD is also highly recommended as a way of moving data, backing up work, and offering an alternative device to work directly from.	• Power will be important for devices being used for 3D animation, as rendering lighting, textures, and frames out of these programs demand a lot for your laptop’s resources. Generally speaking, laptops with better graphics cards tend to have bigger batteries to supply the power needed to perform well.
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Game Arts	• Unity Game Engine • Unreal Game Engine • Autodesk Maya		CPU • Minimum: 4-Core CPU, 64-bit running at least 2.5 GhZ • Recommended: 8-core CPU, 64-bit with Multithreading RAM • Minimum: 8 GB is the absolute minimum for most game engines • Recommended: 16 GB is the recommended minimum, with 32 GB being the recommended “sweet spot” GPU • Minimum: A 3000 series Nvidia GPU, or a 6000 series AMD GPU. For Apple, M1 or higher. • Recommended: 4000 or 5000 series Nvidia GPU, or a 7000 or 9000 series AMD GPU. For Apple, M2 Pro or higher. Storage	• You will likely spend the most time between Unity Game Engine and Unreal Game Engine. Both programs can run on either Mac or PC, but because of the coding language involved in making the games operable they tend to run better natively on PC. • Unity is mostly used for 2D-based games, while Unreal is mainly used for 3D-based games. Because of this difference, if you are unsure what your preference would be, it is recommended to consider a laptop with specs more in line with that of a 3D animation student. 3D game art is the more resource-intensive of the two. • Data management is critical with game arts, so an external SSD drive is highly recommended to back up work.

			• Minimum: 500 GB • Recommended: At least 1 TB – this should last for the student’s 4-year stay at Moore, or very close to it. A portable external SSD is also highly recommended as a way of moving data, backing up work, and offering an alternative device to work directly from.	
Immersive Experience Design	• Adobe Creative Suite • Unity Game Engine • Unreal Game Engine • AutoDesk Maya • Maxon Z-Brush	Immersive Experience Design (ImX) generally tends to use a little bit of every software used in in Animation and Game Arts (AGA), but deals more with the programming side of things. A mid- to high-end 2D Animation device, or a low- to mid-end 3D Animation	CPU • Minimum: A multicore 64-bit CPU for PC, M1 or higher for Mac • Recommended: At least a 4-core 64-bit CPU, with 8-cores being ideal. M1 Pro or Max for Mac. RAM • Minimum: 4 GB. • Recommended: 8 - 16 GB. GPU	• ImX majors can use either Mac or PC, but PC is preferred. •

		Device should suffice.	• Minimum: A 3000 series Nvidia GPU, or a 6000 series AMD GPU. For Apple, M1 or higher. • Recommended: 4000 or 5000 series Nvidia GPU, or a 7000 or 9000 series AMD GPU. For Apple, M2 Pro or higher. Storage • Minimum: 256 GB • Recommended: At least 1 TB – this should last for the student’s 4-year stay at Moore, or very close to it. A portable external SSD is also highly recommended as a way of moving data, backing up work, and offering an alternative device to work directly from.	
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