School of Design Laptop Requirement for New Majors, Fall 2020

The School of Design requires that each incoming Design student own a laptop, and that they be prepared to purchase the software programs used in courses.

Students should budget for the purchase of the necessary hardware and software the way they would books and other supplies for class. *Educational purchase discounts for both hardware and software are available at the SFSU student store, and through various online vendors.*

It is best to begin the program with a good graphics computer that can support demanding software such as Adobe Creative Cloud and/or Solidworks, but you may be able to hold out until your second semester in the program with a laptop that can handle still images and presentation applications. For requirements for ID students, see page 3 and requirements for Vis Com students, see page 5.

Required for All Majors:

Basic Productivity Applications:
All students will need applications that perform word processing, presentation/slideshow, spreadsheet, etc. This functionality can be achieved through a traditional software package like **Microsoft Office**, **Apple iWork**, or through cloud-based software like **Google Docs**.

Design Specific Applications:
All students, whether using an Apple or Windows computer, will need the following Adobe applications: Photoshop, Illustrator, InDesign, and Acrobat Pro.

Registered students in the School of Design can get free Adobe Creative Cloud licenses. This is for declared Majors and Minors only. The process for accessing Adobe software for installation on personally-owned computers is https://athelp.sfsu.edu/hc/en-us/articles/360034974694-How-to-install-Adobe-applications-on-personal-machines. Please log in with your SFSU credentials and you should then have immediate access to the creative cloud programs.

If you are already using your SFSU credentials/email for your current CC account, please go to the support systems below to the free software. If when you login the system does not recognize you, please send your name, ID number, and registration status (Major or Minor) to design@sfsu.edu.

For problems and support with accessing the Adobe software, students can call 415-405-5555, email service@sfsu.edu.

Please note that SFSU IT support is limited to troubleshooting access to the Adobe software or access to the Adobe Creative Cloud portal. SFSU IT cannot provide support or training for the use of the Adobe titles or support student computers themselves.

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When students graduate or leave the University, they will lose access to the SFSU Adobe Creative Cloud license. To migrate their content that they may have stored in the Adobe Creative Cloud to a personal account, students will need to request assistance migrating their data. For now, this can be done by emailing service@sfsu.edu and a member of the AT Desktop Service will assist them.

Additional Applications:

Some advanced or special topic courses require additional software which may be made available to students in the course through an educational license, which may be purchased just before taking the class, which can be obtained via an Adobe Creative Cloud subscription for the duration of that semester, or which is open source and free. Information about accessing specific programs will be provided in these classes' syllabi.

Where to Purchase Student Priced Software:

- https://sfsu.onthehub.com. *Always make sure that you are obtaining student pricing for the applications that you purchase and be ready to provide documentation supporting your student status.*
- Adobe Creative Cloud: See information above about the Free License for Design majors
- Companies will have student pricing on their sites. Please work with your faculty to ensure you are getting the best price.

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Required for BSID (Bachelor of Science in Industrial Design) Majors:

The BSID – Bachelor of Science in Industrial Design program requires the use of 3D computer-aided design and modeling software in addition to standard 2D applications. The most demanding applications used in BSID are SolidWorks, Rhinoceros 3D, Keyshot, and Fusion 360.

The main 3D modeling applications used in the BSID program are SolidWorks and Rhino 3D. SolidWorks only runs in Windows and Rhino is primarily developed for Windows, so a Windows PC laptop is recommended for all students in the BSID program. In general, good quality PC laptops are available from Dell, Lenovo and HP. Following the specifications below, you should expect to spend $1500-$2500.

While not recommended, Apple computers can be made to run SolidWorks if necessary. In this case, additional software is needed to allow the applications to run at reduced capacity:

- A Windows 10 license (roughly $100) and either
    - Parallels Desktop (roughly $80 in addition to the Windows license)
    - Apple's Boot Camp software (free, but requires partitioning your hard drive)
- A multi-button mouse to access certain commands
- Some remapping of keyboard commands for best results (e.g. Backspace to Delete)

Software:

The BSID program currently uses the following special-purpose applications:

- Dassault SolidWorks, for mechanical modeling and solid product design (free educational license, renewable every year; you will be notified of access methods in class)
- McNeel Rhinoceros 3D, for sculptural surface modeling and advanced form work (floating educational license, available to BSID students through the school network)
- Luxion KeyShot, for photorealistic 3D renderings (floating educational license, available to BSID students through the school network)
- Autodesk Fusion 360, for CNC machining and manufacturing (free educational license available through autodesk.com)

In addition to the skill-development classes that teach them, core product design studio classes will require the use of these applications. Other courses may require additional special-purpose applications which are usually free/open-source and available for Mac and Windows.

Hardware Minimum Requirements:

- **Processor:** Multicore 64-bit Intel processor. Minimum 2.3GHz dual-core Intel Core i5 or 2.2GHz dual-core Intel Core i7.
- **Operating system:** Windows 10 (64-bit)
- **Memory:** Minimum of 8GB of RAM recommended. 16GB will give superior performance

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- **Storage:** 500GB+ 7200RPM hard disk or 256GB+ solid-state drive (SSD). SSD will significantly improve performance.
- **Graphics:** Intel HD Graphics 510 or better required. While Intel graphics chips will run the applications, performance will be reduced. A discrete NVIDIA graphics card with at least 4 GB of VRAM will provide significantly better 3D performance.
- **Size/Display:** 15" display with at least 1600 x 900 resolution and ideally higher. A smaller, lighter (e.g. 13") laptop may be a reasonable choice if you have a large display at home with separate mouse and keyboard for more complex and detailed projects. A high-resolution laptop display is still recommended, no matter the size.
- **Optical Mouse**: For 3D modeling software, a 3-button mouse with a center wheel-button is required. Trackpads alone do not support effective 3D navigation and will greatly increase the time required to complete your work. Choose one that is comfortable to use but portable enough to bring with your laptop.

Strategic Extras:

- **Backup Capability** using an online ("cloud") provider will let you back up your course work (important!) and share it to others more easily. All students have a free Box account: https://sfsu.app.box.com Other If options include Windows' built-in OneDrive, or third-party Google Drive, box.com, or Dropbox. If possible, an external drive as secondary backup (La Cie or Seagate are good brands) is a good idea as well.
- **Pocket USB flash drive** for exchanging files with others, loading files onto 3D printers and CNC tools, and presenting work.
- **Spare AC Adaptor to leave at home** (most frequently seen object in our lost and found)
- **Laptop security cable** to tether your machine wherever you are working at school, assuming laptop has a Kensington-type security slot.
- **Insurance policy coverage** added to your home or renter's insurance.
- **Extended Warranty** if available
- **Second Display Screen** for work at home
- **External battery or power pack** (10000-20000 mAh) for charging laptops and smartphones.

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Required for BSVCD (Bachelor of Science in Visual Communication Design) Majors:

BSVCD requires courses in graphic design and digital media e.g. interactive and prototyping design, motion graphics (producing large digital video/sound files), etc.

A MacBook Pro (Retina display or the NVIDIA graphics card) is recommended for this major because the Apple OS and hardware are the standard in the visual communication design / graphic design industry.

Most of the software needed will run fine on either Windows or Mac platforms assuming you have met the basic system requirements of the Adobe Creative Suite programs and have graphics hardware that is in line with our basic recommendations. Adobe After Effects is the most challenging for the GPU, CPU, and RAM.

NOTE: some of the most widely used user prototyping, font authoring and surface-prototyping software only run on Macs.

Software

Visual Communication Design Courses (BSVCD students):
The same as for Core Foundation Courses. Note that the Adobe Creative Cloud student subscription also provides access to additional applications often used in our interactive media classes, including XD, After Effects, Unity Development Platform (available free), Edge Animator, Premiere, etc. Students also use prototyping software such as InVision Studio and Sketch (we have reduced-fee and free licenses available for students – your instructors will help you with these).

Hardware Minimum Requirements:

- **Processor:** Multicore Intel processor with 64-bit support. Minimum 2.3GHz dual-core Intel Core i5 or 2.2GHz dual-core Intel Core i7 processor.
- **Operating System (either one of the following):**
  - Apple: Mac OS X versions 10.12, 10.13, 10.14
  - PC: Windows 10 (64-bit)
- **Memory:** Minimum of 8GB of RAM (random access memory) recommended (note: After Effects requires 16 GB RAM).
- **Storage:** 500GB+ 7200RPM hard disk or 256GB+ solid-state drive (SSD). SSD will significantly improve performance.
- **Graphics:** A MacBook Pro with Retina Display and at least 4GB of VRAM will provide suitable performance.
- **Size/Display:** 15" display with at least 1600 x 900 resolution and ideally higher. Note: A 13" laptop could work if the student has a larger display at home with a standalone full-size keyboard for more complex and detailed projects. A high-resolution laptop display (15") is still recommended (especially for use with prototyping and motion graphics software in classes).
- **A 2-button mouse is required at a minimum** (trackpads on the laptop are neither accurate or ergonomic). Alternately, students may use a tablet (such as Wacom), or an external trackpad if they prefer.

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- **Backup Capability:** An online ("cloud") backup account for frequent backups of student course work as well as sharing (Google Drive, box.com, or Dropbox, recommended).

Strategic Extras:

- **Backup Capability** using an online ("cloud") provider will let you back up your course work (important!) and share it to others more easily. All students have a free Box account: https://sfsu.app.box.com Other If options include Windows' built-in OneDrive, or third-party Google Drive, box.com, or Dropbox. If possible, an external drive as secondary backup (La Cie or Seagate are good brands) is a good idea as well.
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- **Spare AC Adaptor to leave at home** (most frequently seen object in our lost and found)
- **Second Display Screen** for work at home
- **Insurance policy coverage added to your home or renter's insurance.**
- **Extended Warranty** such as Apple Care
- **Laptop security cable** to tether your machine wherever you are working at school, assuming laptop has a Kensington-type security slot.
- **External battery or power pack** (10000-20000 mAh) for charging laptops and smartphones.