

UC-Merced School of Engineering Student Laptop Policy

Approved by Faculty of School of Engineering May 8, 2019

Professor Catherine Keske, Faculty Chair, School of Engineering

With input from:

School of Engineering Professors Sarah Kurtz and Lisa Yeo

*Office of Information and Technology (OIT): Kent Carpenter, Alex Hernandez-Perez,
and Veer Singh*

SOE Executive Committee:

*Professors Joshua Viers, Christopher Viney, Jian-Qiao Sun, Florin Ruso, and Eva de Alba
Dean Mark Matsumoto*

Faculty of the Department of Computer Science Engineering

Table of Contents

- 1.0 Background (Page 3)
- 2.0 Student Computer Ownership: Current State (Pages 3-4)
- 3.0 Proposed Computer Policy (Page 4)
- 4.0 Recommended Computer Configurations (Pages 4-6)
- 5.0 Additional Computing Notes (Pages 6-8)
 - 5.1 Backing up Files (Page 6)
 - 5.2 Display (Page 6)
 - 5.3 Ethernet Port (Page 7)
 - 5.4 Printer (Page 7)
 - 5.5 Operating System (Page 7)
 - 5.6 Software (Page 7)
 - 5.7 Tech Support (Page 8)
 - 5.8 Enhanced Graphics Cards (Page 8)
 - 5.9 Windows and Mac Compatibility (Page 8)
- 6.0 Obsolete Computers (Pages 8-9)
- 7.0 Financial Aid (Page 10)

Attached separately:

Appendix A: Kurtz Power Point with ENGR 191 Survey Results

Appendix B: IRDS 2018 New Student Survey Report

Appendix C: April 2019 OIT Student Survey

1.0 Background

In order to support student success, the School of Engineering (SOE) is communicating minimum hardware specifications for student laptops effective August 2019. Procurement of a computer that meets these specifications will improve a student's success by facilitating connectivity to the University's network, which enables the execution of tasks assigned in most engineering classes, thereby cultivating the skill development necessary for acclimation into today's workplace. As students are selecting computer hardware, the computer information is intended to guide students how to meet their needs without spending more money than is necessary, much like the textbook list provides information for textbook procurement. Essentially, SOE will adopt a policy similar to the campus textbook policy, found [here](#).

Computer recommendations will be managed the same as textbook purchases. Textbooks and personal laptops are recommended for student success, though compliance will not be monitored.

This written policy is intended to emphasize the importance of technology in student success and to promote consistent expectations within the School, ***while reinforcing the importance of maintaining existing computer laboratory space.***

Personal laptops and computer labs should be viewed as complementary, not competing, educational resources.

The computer labs will continue to be maintained and upgraded, and there may be additional course-specific software requirements commensurate with rapid changes in technology and programming. Other software (e.g. R and Mathematica) requirements will be managed on a course-by-course basis.

Under no circumstance will a computer lab session for an undergraduate class be scheduled in a class that is not designated as a computer lab space maintained by the university.

2.0 Student Computer Ownership: Current State

Not much change is anticipated in student computer ownership rates.

Two surveys were conducted during Fall 2018 to obtain additional information about student computer ownership. The first survey was conducted with 162 of 170 students in ENGR 191; these students were queried about laptop ownership rates, financial hardship, and value of laptops in student educational success. The second survey was completed by Institutional Research Decision Support (IRDS) on

December 17, 2018 (N=242) to assess computer ownership rates, computer laboratory use, and awareness of financial aid availability.

Survey results showed that a majority of students already own laptops, and they believe that personal computer ownership is important to their educational success, although most were unaware of University financial aid resources available for laptop purchases. Furthermore, students also report that maintaining campus computer lab access will be critical to their educational success. These survey results are presented in two separate documents, Appendix A and Appendix B.

During April 2019, OIT surveyed a small sample of SOE students who contacted the office for technical support (N=15). The majority of students reported that the proposed policy and technical specifications were clearly communicated in the proposal. Students recommended that faculty message the new policy as a recommendation, rather than a requirement, and perhaps provide more background information about why the policy is being put into place. Results of the survey are available in Appendix C.

3.0 Proposed Computer Policy (student messaging)

Beginning Fall 2019, it is strongly recommended that all incoming freshmen and transfer students in the UC-Merced School of Engineering (SOE) have a personal laptop computer to run software needed for course work. This enhances students' learning experiences and provides flexibility for running course software from any on- or off-campus location. In some courses, it may not be possible to run the instructional software on a personal laptop. In such cases, students will be required to use the computing laboratory facilities provided by the University

SOE does not require or recommend a particular brand or type of laptop. However, depending on the major, different software packages will be necessary. Graduate students are encouraged to consult their advisors prior to purchasing computers. As follows are guidelines for minimum hardware configurations for laptops. For questions regarding laptop specifications, contact the UC-Merced Service Desk: oit.ucmerced.edu or 209-228-HELP (4357)

4.0 Recommended Computer Configurations for Students

SOE expects each student to own a computer that meets certain minimum performance standards, as shown here. Please note that these recommended specifications reflect policies similar to other UC campuses. Tablets and other similar mobile computing devices are currently too limited to comfortably perform all the desired or necessary functions required for coursework.

NOTE: Chromebooks cannot be used in place of a computer. Although Chromebooks are often viewed as a less expensive alternative to a laptop, instructional applications cannot be installed on Chromebooks.

The recommendations for Windows PC computers meet the hardware requirements of Microsoft’s Windows 10 operating systems, excluding Windows 10S.

Recommended Computer Configurations		
Platform	Windows PC	Apple
CPU	Intel Core i5, i7 AMD A10	Intel Core i5, i7
RAM	8GB is acceptable. For laptops with user non-replaceable RAM, 16Gb is highly recommended.	
Hard drive	<p>256 GB SSD* or HDD **</p> <p>500 GB SSD*/HDD** is recommended to store a lot of data, applications, music or movies.</p> <p>* Solid State Drive - SSD is much faster and has no moving parts compared to HDD and is recommended over HDD.</p> <p>** Hard Disk Drive – traditional technology at a lower cost.</p>	
Backup	Regular system back-ups are highly recommended. See Section 5.1.	
Display	See Section 5.2 for laptop screen size	
Network	<p>Wireless: 802.11g/n</p> <p>Wired: Ethernet port</p> <p>See Section 5.3 for more about Ethernet ports. Student housing is equipped with wireless access. Students that want to connect additional network devices to the data network will need an Ethernet cable. In most cases, a cable of 12 to 15 feet should suffice.</p>	

Printer	See Section 5.4	
OS See 5.5	Windows10	Mac OS X 10.12 (High Sierra)
Software	See Section 5.6 for information about buying software products and downloading free anti-virus software. Anti-virus software is required when using the campus network.	
Warranty	3-year parts and labor is highly recommended (so is an on-site repair warranty, if funds permit)	Apple Care (a 3-year warranty may be bought for a new computer within one year of the purchase date)

5.0 Additional Computing Notes

5.1 Backing up files:

At a minimum, important files should be backed up at an external location, such as a USB device, external hard drive, server or online cloud service. If large amounts of data such as multimedia and music files are regular backed up, consider a backup resource with up to one-third more storage than the drive (e.g., roughly 720 GB for a 500 GB drive). A few GB might suffice for smaller files. [Read more about backups.](#)

Once new students have a valid UC-Merced email address, they can take advantage of free cloud storage through Box. At UC-Merced, the campus provides each student a [Box.com](https://ucmerced.app.box.com/files) (https://ucmerced.app.box.com/files) account with unlimited storage space while an active student. Click [here](https://it.ucmerced.edu/content/box-com-mybox) (https://it.ucmerced.edu/content/box-com-mybox) for more details.

5.2 Display:

Laptop – Laptop displays should have a minimum resolution of 1366x768. The display should be comfortable for reading and viewing. The screen should be at least 13 inches diagonally.

Desktop – Desktop displays should have a resolution of at least 1440x900 (widescreen). A 19-inch monitor (at minimum) is recommended.

5.3 Ethernet port:

All computers must be ready to use the network, in wired and wireless formats. For a wired connection, a computer requires either an Ethernet (RJ-45) port or a USB-to-Ethernet adapter (Apple's version is Thunderbolt-to-Ethernet). Glacier Point and Granite Pass are Wifi access-only.

5.4 Printer:

Students living in the residence halls should think twice before bringing a printer and expecting to use the built-in WiFi features. Printer WiFi will interfere with the campus WiFi. Students should plan to use a printer with physical cabling.

Regardless of where students live, they can use the printers in campus laboratories, Library and other campus locations. Printing incurs a small cost, but saves the expense of buying a printer, ink and paper. More information is available at:

<http://library.ucmerced.edu/use/technology/print-copy-scan>

5.5 Operating system (OS):

Microsoft Windows 10 – The recommendations for Windows PC computers on this site meet the hardware requirements for Windows 10.

Macintosh OS X 10.13, also known as High Sierra – The recommendations for Apple computers on this site meet the hardware requirements of OS X 10.13 (High Sierra).

5.6 Software:

UC-Merced offers various software for download off the [Software License Coordination \(SLC\) website](#).

Current students can [download Office 365](#).

UC-Merced provides students with access to anti-virus software. To download them click [here](#).

Software required for course work (e.g. Mathematica or open source software like R) should be readily available, but students are responsible for working with the OIT Service Desk to ensure that their software is functional to complete course work. We recommend that students visit software manufacturer websites for the latest information about versions and hardware requirements. Please note that technology changes and newer versions of software will continue to increase the demands on computer hardware.

The faculty, instructors, and teaching assistants do not provide technical support. If students cannot run the required software on personal computers *for whatever reason*, it is recommended that students use the computer lab.

5.7 Tech support:

The OIT Service Desk can help students in many areas, including campus software, campus Internet access, and activating and accessing UC-Merced email and computing accounts. Visit <http://OIT.ucmerced.edu> to access their site. A student-focused page is available here: (<https://it.ucmerced.edu/student-services/>) Questions regarding these minimum hardware recommendations can be submitted via a request ticket through <oit.ucmerced.edu> or by calling 209-228-HELP (4357).

A more extensive warranty beyond the very limited one-year manufacturer provided may be useful depending on planned usage. An “Accidental Damage Coverage” (ADC) plan can prevent repair costs from exceeding the value of the computer in case of damage.

5.8 Enhanced Graphics Cards

An Integrated Graphics Card doesn't use its own RAM; instead, it utilizes the system's memory. For example, in a computer with 4 GB of RAM, the video card can use from 1%-5% of the available memory for graphics processing. This percentage varies depending on the size of task.

Students in majors using designing software such as Comsol, Solidworks, etc.; will experience slowdowns. A dedicated/enhanced graphics card has its own independent source of video memory, leaving the system's RAM untouched. For example, a G-Force video card with 2 GB of video memory is completely separate from the computer's 8 GB of system memory.

5.9 Windows and Mac Compatibility

Windows-only versions of course software can be run on Macs using software such as Parallels, VMWare, VirtualBox, or Boot Camp. However, SOE cannot supply such software.

6.0 Obsolete Computers:

The following computer systems might not be able to 1) run current software needed for daily computing, or 2) use specific file formats required for classes. Vendors usually do not support them.

Students with computers with any of the specifications found in this section—or with older machines with less capacity than is listed here—are likely unsuitable for campus computing needs. Please consider updating the computer as soon as possible.

	Desktop computers		Laptop computers	
Platform	Windows PC	Apple	Windows PC	Apple
CPU	Intel Core 2 Duo*, Celeron or Pentium AMD A8 or below	Intel Core 2 Duo*	Intel Core 2 Duo*, Celeron or Pentium AMD A8 or below	Intel Core 2 Duo*
RAM	Less than 8 GB			
Hard Drive	Recent computing trends have made the required size of the hard drive too variable to set a fixed minimum. The size needed depends on where and how much data is stored. For example, if course work is mostly in the cloud, a small hard drive might suffice.			
Display	Resolutions of 1024x768 or less			
Network	Wired: Any system without an internal or external network adapter Wireless: 802.11 a/b-only wireless cards			
OS	Windows 10S, Windows XP, Vista and earlier versions	Mac OS 10.9 and earlier	Windows 10S, Windows XP, Vista and earlier versions	Mac OS 10.9 and earlier
Software	Versions of Microsoft Office earlier than 2013 and Internet Explorer earlier than 11	Versions of Microsoft Office earlier than 2011	Versions of Microsoft Office earlier than 2013 and Internet Explorer earlier than 11	Versions of Microsoft Office earlier than 2011

*Note: "Intel Core Duo" is a brand name. Do not confuse the term with "dual-core processor."

7.0 Financial Aid

Additional financial aid funds may be available to assist with the cost of purchasing a laptop computer. Students may also request a Cost of Attendance Adjustment for a one-time \$1200 computer purchase. More information about the Cost of Attendance Adjustment, and the Cost of Attendance Adjustment form are available [here](http://financialaid.ucmerced.edu/node/781), at <http://financialaid.ucmerced.edu/node/781>

Students must submit a FAFSA and any other requested documents before being considered for funds to purchase a computer. Please contact [Financial Aid](#) directly for questions: <http://financialaid.ucmerced.edu>