

UNDERGRADUATE STUDENT COMPUTER OWNERSHIP GUIDE

Georgia Institute of Technology

2016/2017 Information

<http://www.sco.gatech.edu>

Welcome to the Georgia Institute of Technology! Georgia Tech requires all undergraduate students, including transfer students, to own a laptop computer that can be used in your residence and carried to class. This document describes minimum hardware and software requirements, support and security guidelines, and computer ownership financial aid information.

PURCHASING HARDWARE

Whether you choose to purchase a new computer or you already own a laptop, make sure it satisfies as many of the components listed in the “Hardware Requirements” section below as possible. To access detailed information on purchasing a laptop computer, see <http://techstuff.gatech.edu>.



Life Cycle

Ideally, a new laptop/notebook that meets the specifications in this document will continue to serve your needs for the next four years. If you are entering with a used notebook, you may need to upgrade it before you graduate, depending upon its specifications and your needs. The Technology Store @ Georgia Tech (located inside Barnes & Noble) has prepared several packages that meet or exceed the Georgia Tech hardware requirements. Please feel free to check with the Technology Store, the Technology Support Center of the Office of Information Technology (OIT), or with a ResNet (Residents Housing Network) staff member if you have specific purchasing questions. (Contact information is provided at the end of this document.)

HARDWARE REQUIREMENTS

Hardware needs to meet **at least the minimum standards** summarized in the table below. Students should also check with their school or department to determine if there are additional requirements for their course of study.

Minimum Hardware Requirements

Processor	64-bit multi-core processor
Memory	8GB (or higher)
Primary Storage	128GB (or higher)
Backup	External Hard Drive or cloud service
Networking	Dual-Band (2.4GHz/5GHz) Wireless 802.11n
I/O devices	Physical keyboard and mouse/Trackpad

Additional Recommendations

Recovery option	Highly recommended
Extended Warranty	Highly recommended
Optional accessories	VGA dongles, Ethernet cable, laptop anti-theft cable lock, webcam, HDMI dongle, microphone, and headphones

The computer should be fast enough and have enough memory and disk space to provide satisfactory performance over a usable life of at least three to four years. The hardware requirements and recommendations are discussed in greater detail below:

- Form Factor:** Notebook* with a minimum of 4 hours of battery life is required.
- Processor:** 64 bit Multi-core processor or better.**
- Memory:** 8 GB or more. For best performance, we recommend that you configure/install as much memory as affordable at the time of purchase.
- Operating Systems:** Windows or Mac OS or Linux
- Primary Storage:** Hard drive/solid state drive with a minimum of 128GB of storage capacity.
Note: It is advisable that you get as large a drive as affordable. Check with your school/department to determine if greater storage capacity is needed.
- Backup:** For local backup, an external hard drive with at least double the size of the internal hard drive or a subscription to a cloud based backup solution like CrashPlan or OneDrive is highly recommended. (See FAQ Q23 for additional information.)
- Networking:** Dual-Band (2.4 GHz/5 GHz) Wireless 802.11n capable
- Recovery options:** It is highly recommended that all computers include a recovery partition or recovery utility that allows quick restoration of the factory image, should a re-installation be necessary. If the system does not have a recovery partition,

then students should have their software media with them in the event a re-installation is necessary. *If you have questions, check at the point of purchase or at the Technology Support Center.*

Accessories: Physical keyboard and mouse/Trackpad.

* Note that most tablets do not meet the minimum hardware requirements. However, if it meets all the hardware requirements and can run full desktop operating systems, a tablet is acceptable.

** The use of VLab*** does not diminish these requirements. Your system will still need to independently support the required software.

*** Virtual Lab (VLab) provides GT students a way to access 'virtual machines' on campus and use software such as MATLAB and AutoCAD from any computer with Internet access. See mydesk.gatech.edu/vpn/ for the Citrix Access Gateway to VLab.

Warranty: Extended warranties (three years, in general) are highly recommended. These warranties normally cover hardware problems as well as system troubleshooting via phone or email. (Additional accidental damage coverage should be considered, if available.) The Bell Techlogix service at the Technology Store serves as a third party hardware repair center for all vendors.

Third Party Resources: The Technology Store offers in-store purchasing in addition to an online order site. Visit techstuff.gatech.edu for exclusive discount pricing for the Georgia Tech community on hardware, software and accessories. All students who have been accepted to Georgia Tech should already be assigned a GT account, which is required for access to this special pricing. To access the techstuff.gatech.edu site fully before your FASET orientation session, go to www.passport.gatech.edu to activate your GT account and set up your password.

Optional Accessories:

- Dongles for connecting to an external display or projection device
- All classrooms on campus utilize VGA as the standard connectivity option for projection systems and 3.5 mm or 1/8" jack for audio; and newer classrooms may also have DVI and/or HDMI connections. The Institute does not provide video adapters for notebooks, tablets or other mobile devices. (See classrooms.gatech.edu for information on classroom support resources.)
- USB flash drive
- Ethernet cable (14 ft or longer recommended)
- Laptop anti-theft cable lock
- A laptop with a webcam and microphone is recommended, or an external webcam, as well as a USB microphone and headphones

Network Connections

Georgia Tech currently provides wireless access in nearly every building on campus, including offices, labs, classrooms, student residence halls, and most outdoor spaces. Visit www.lawn.gatech.edu for more information and coverage maps.

In addition, all rooms in campus residence halls offer wired computer network access. Each room has as many wired connections as students. Housing fees cover access; there is no additional charge. To

access the network using a wired connection, students living in campus residence halls will need a CAT-5e or CAT-6 Ethernet cable for their computer.

Printing

Commons/Library/Student Center:

Although owning a printer is not required, many students purchase a printer for their own convenience. The printer should be connected using a USB or wired network connection. Pharos printing services utilizing BuzzCard funds are available throughout campus, and a free print allocation of \$2.20/week is provided to students for printing in the Commons at the Georgia Tech Library, Clough Undergraduate Learning Commons, and the Student Center.

CentralPS:

Printing is also available from the Central Printing Services (CentralPS), which is an offsite printing service with print jobs delivered to bins in the Student Center Computer Cluster. Students are currently not charged for CentralPS printing. CentralPS is limited to 1200 pages per semester. Detailed information about these services can be found on the Commons Website (librarycommons.gatech.edu).

For-Fee Printing Services:

Funds available on BuzzCards may be applied to printing (both Black & White and Color options) on all computer clusters. These pay-for-print capabilities are available once the weekly print allocation is expended.

STANDARD SOFTWARE

Georgia Tech supports a standard software suite for both Windows and Mac OS X systems. Standard software minimizes software incompatibilities between students and faculty, helps meet educational goals, improves the effectiveness and timeliness of software support, and helps minimize support costs. The Office of Information Technology (OIT) and ResNet will actively support the standard software. Most standard software will additionally be available for student use in the general-purpose computing clusters maintained by OIT (librarycommons.gatech.edu).

Students should install software packages at the time they are needed for use in their courses; many packages are available for free at software.oit.gatech.edu. Be aware that downloading and installing additional software can substantially affect the performance of your computer. Removal of software from expired trials is encouraged to maximize the operating speed of your system.

Since the Technology Support Center and WreckTech cannot support all software, if students choose to use any non-standard software, they may be solely responsible for maintaining it.

Students should have available a record of the license keys for all their purchased software so that these may be re-installed in the event of a serious problem or system reinstall.

The standard software suite for Mac OS X and Windows is as follows:

Windows Systems

Operating System: Microsoft Windows 8.1 (64-bit) or newer version

Note: Included with new computer purchase.

Email: My GaTech (can be used with any web browser)
 Note: Accessible online at my.gatech.edu, no purchase or installation required.

Data Backup: Windows Backup
 Note: Included as part of Windows 7 and newer versions. Requires external hard drive.
 Optional: crashplan.com/gtstudent unlimited backup and storage for a fee.
 Here is a document that provides some great advice on Data Backup:
www.us-cert.gov/sites/default/files/publications/data_backup_options.pdf

Security: The Technology Support Center and WreckTech recommends and supports Microsoft Security Essentials and recommends their use to protect against viruses or malware.
www.oit.gatech.edu/service/desktop-laptop-security/anti-virus-software

Word Processor, Spreadsheet, Presentation Software:

Microsoft Office 365 Pro Plus or OpenOffice
 Georgia Tech students can download Office 365 Pro Plus for free at office365.gatech.edu (For additional information see: faq.oit.gatech.edu/content/im-student-how-can-i-get-access-microsoft-office-365-pro-plus-free)

OpenOffice can be freely downloaded at www.openoffice.org

Online Storage: As part of the Office 365 Pro Plus package, students will have access to OneDrive for file syncing and storage. (See FAQ Q23 for additional information.)

Mac OS X Systems

Operating System: Apple Mac OS X El Capitan 10.11 or newer version (Note: 10.10 Yosemite is still acceptable at this time.)

Note: Included with new computer purchase.

Email: My GaTech (can be used with any web browser)
 Note: Accessible online at my.gatech.edu, no purchase or installation required.

Data Backup: Apple Time Machine
 Note: Included with Mac OS X. Requires external hard drive.

Optional: crashplan.com/gtstudent, unlimited back up and storage for a fee.

Security: The Technology Support Center and ResNet supports Sophos and Apple Xprotect and recommends their use to protect against viruses or malware.
www.oit.gatech.edu/service/desktop-laptop-security/anti-virus-software

Word Processor, Spreadsheet, Presentation Software

Microsoft Office 365 Pro Plus, OpenOffice, or iWork Suite

Georgia Tech students can download Office 365 Pro Plus for free at office365.gatech.edu

OpenOffice can be freely downloaded at www.openoffice.org.

Windows Compatibility:

Windows compatibility software is not required campus-wide. However, some classes may require the use of specific, Windows-only applications. Students in these classes choosing to use Mac OS X systems can install virtualization software (Parallels Desktop or VMware Fusion (paid) or Virtual Box (free)) and a fully licensed copy of Microsoft Windows 8 (or newer) in order to run Windows applications; or use Apple's Boot Camp solution to run Windows at native speed. Keep in mind that virtual machines take away from your total available RAM; this is why we recommend a minimum of 8GB.

Note: Apple will be dropping support for Windows 7 on Boot Camp.

LINUX Operating Systems

OIT recommends that students who need to use Linux for class assignments carefully consider which distribution of Linux they will install. For the best experience possible, OIT recommends students stay with Ubuntu-based Linux distributions such as one of the following:

- Ubuntu
- Linux Mint
- Elementary OS

These distributions offer the most familiar user interface and are relatively easy to interact with.

IMPORTANT NOTE: It is **highly recommended** that any Linux distribution be used as a **Virtual Machine** and not as a multi-boot or Boot Camp environment, since modifying the local partition tables may lead to unstable computer systems and have a high potential for data loss.

Please know that OIT and the Technology Support Center provide "limited/best effort" support for Linux distributions at this time. Some support documents have been created to support Linux users and are available at faq.oit.gatech.edu or for wireless configuration at lawn.gatech.edu.

The standard software suite indicates software versions known at the time of this printing. At the time of purchase, students should acquire the latest versions for the computer they will be using. If

you purchase software from the Technology Store, then you will always receive the current version. The Technology Store can be accessed online (<http://techstuff.gatech.edu>) and offers exclusive discount pricing for the Georgia Tech community on software, hardware, and accessories. Additional purchasing options include e-academy / on-the-hub (<http://www.onthehub.com/>) – an online vendor offering academic discounts for essential and curriculum-based software – or other commercial sources.

FINANCIAL CONSIDERATIONS

Through an appeals process, computer ownership costs and expenses may be added to the Institute's Cost of Attendance (Student Budget) for entering freshmen and undergraduate transfer students. Applicants who apply for student financial aid through the Office of Scholarships and Financial Aid (OSFA) may request to have a one-time adjustment up to a maximum of \$1100 added to their Cost of Attendance for purposes of determining his or her eligibility for student financial assistance. A receipt showing computer purchase costs will be required at the start of the first term. Procedures on how to initiate this request can be found at www.finaid.gatech.edu/costs. Contact a financial aid advisor, listed at www.finaid.gatech.edu/contacts, with any questions.

COMPUTER SUPPORT

Georgia Tech provides the following support facilities and services:

- Printing (limited)
- Internet access
- Email
- Centralized network storage (limited) and basic web-hosting
- Computer labs for short-term access to computers running the standard software
- Departmental clusters or labs with major-specific software (e.g., mathematical manipulation and calculation, CAD, compilers, and databases)
- Special classrooms and labs for computer-enhanced presentations

Technology Support Center
support@oit.gatech.edu

Services provided by the Technology Support Center include account support, software troubleshooting, and diagnostics. The Technology Support Center is also available to students to offer consultation about computer hardware configurations. The Center is in Room 218 of the Clough Undergraduate Learning Commons, and is available for walk-in support and at 404-894-7173. User Assistants are also available in the Library computer clusters. The Technology Support Center also offers How-to Clinics each semester. See tsc.oit.gatech.edu for dates and times.

ResNet

ResNet provides full support to residents of the on-campus residence halls through the ResNet Program. ResNet utilizes student technicians as Residential Technology Advisors (RTAs) who are available to provide telephone, online chat, in-office, and on-site technical support to residents. RTAs are available to assist students with such tasks as connecting to the GT wired or wireless network, installing anti-virus software, and assisting with gaming devices.

ResNet is the only department on campus that provides After Hours Support (see wrecktechs.gatech.edu for days and times of operation) and in-room repairs. Students may leave their laptops in the ResNet office in order to obtain technical assistance with diagnostic checks, virus and malware removal, and adding software. All residence hall wireless access points and wired network connections are maintained, supported, and repaired by ResNet and student RTA staff. ResNet will also conduct in-room assistance without appointments during Fall Move-in week.

Third Party Support

All computer repair and upgrade services for Apple, Dell, Lenovo, and HP are executed by Bell Techlogix, Inc. located in the Technology Store. Hardware repairs on all brands of computers regardless of where they were purchased or current warranty status can be facilitated at this location.

COMPUTER SECURITY

All members of the Georgia Tech community play a role in protecting the Institute's information assets and systems. To help facilitate this effort, we ask that you do the following:

- Read the Georgia Tech Computer and Network Usage and Security Policy located at www.oit.gatech.edu/sites/default/files/CNUSP.pdf
- Review the GT Information Security online tutorial located at security.gatech.edu/
- Install anti-malware software on your system and set it to update automatically (most software will be configured this way by default). OIT and ResNet recommends and supports Microsoft Security Essentials (windows.microsoft.com/en-us/windows/security-essentials-download) for Windows and Sophos for the Mac OS, to help guard against viruses, spyware, and other malicious software.
- Create strong passwords and do not share them with anyone for any reason. A strong password has at least eleven characters and uses a combination of numbers, upper and lower case letters, and special symbols (!@#\$%^&*+). Do not use the same password for multiple purposes or websites. Password management tools (e.g. LastPass lastpass.com) are highly recommended, and can help with the development of strong passwords.
- Register your devices with the GT Police at police.gatech.edu/services/property/index.php
- Keep software applications, operating systems, and security patches current by visiting vendor websites regularly. Microsoft Windows and Apple Macintosh users can set their computers to download Operating System patches automatically:

Windows Users: Enable Windows Update –
Control Panel -> Automatic Updates -> Automatic (daily)

Mac Users: Enable Software Update –
System Preferences -> Software Update -> Check for updates (weekly)

- Perform regular backups and store them in a secure location.
- Verify that websites are secure prior to entering personal information by looking to see that your web browser is pointed to an https rather than an http address.
- Log off or lock your session when away from your computer.

- Prevent theft of your computer: use a cable lock to secure your laptop to a table or desk if you need to step away.
- Do not use your computer to download, copy, store, or redistribute copyrighted materials for which you do not have the legal right to do so.

FREQUENTLY ASKED QUESTIONS

- Q1: How can I determine if my current system will meet Georgia Tech's hardware requirements?
 A1: Refer to the "Hardware Requirements" section of this document, the Student Computer Ownership (SCO) website (www.sco.gatech.edu), or the Technology Support Center.
- Q2: Is it better to upgrade my current computer or to buy a new one?
 A2: This choice is dictated largely by your personal budget considerations. However, it is generally better to buy a new machine if you can. This machine will be faster, will have the latest technology, and generally have a longer usable life. Also, be aware that many modern laptops and most tablets cannot be upgraded. Upgrades are usually limited to adding RAM and, occasionally, internal storage.
- Q3: If I purchase a new computer, how should I decide on the processor speed?
 A3: The best strategy is to purchase a relatively fast machine since it would have a longer usable life and would be able to meet your educational needs during your time at Georgia Tech. A good compromise between speed and cost is a processor one or two speeds slower than the fastest available. A computer at the low-end of the speed scale will adequately run the standard software but provides no room for expansion. A solid state drive typically provides a bigger performance boost than a faster processor. A number of good choices exist in the \$1,000 to \$2,000 price range.
- Q4: What should I do if I have a problem with the network connection in my residence hall room?
 A4: All rooms in Georgia Tech residence halls have the necessary network connections for your computer. These connections are fully supported by ResNet. If you have any problems, you should first call the ResNet office. Contact information is listed at the end of this document.
- Q5: If I do not own a printer, how will I print my documents?
 A5: A moderate weekly quota is provided to students for color or black and white printing in any OIT Computer Cluster, and students may use their BuzzCard for pay-for-print if they ever need to exceed this quota. For larger printing needs, students may use a free central printing service (1200 pages/semester). See www.oit.gatech.edu/service/computer-labs/printing for more details. Additionally, some departments/schools provide their students with additional free print allocation on a weekly, monthly, or semester basis.
- Q6: If printers are optional, is it worth it for me to buy my own?
 A6: While limited printing facilities are available across campus, it is certainly more convenient to have your own printer. Please see Answer 5 above for printing options.
- Q7: I already have some of the standard software. May I purchase only certain packages from the Technology Store?
 A7: Yes, you may purchase any package separately from the Technology Store. Call or email them for specific software prices.
- Q8: How can I obtain software from Georgia Tech?

- A8: Georgia Tech has site licenses for several software packages for use on your own computer. The software available can be downloaded at no cost from software.oit.gatech.edu/.
- Q9: I don't want to use one of the components of the standard software suite. Can I use something else?
- A9: Standard software minimizes software conflicts and increases the quality of software support. If you decide to use something other than the standard software, then it is your responsibility to purchase and maintain the software. It will be your responsibility to eliminate any software conflicts with the standard software as you start to share documents with your fellow students and submit homework assignments to your professors.
- Q10: Can I use Linux and open source software?
- A10: Yes, however, OIT and ResNet only provide "limited/best effort" support for Linux operating systems and software, and you will be responsible for ensuring that this software is fully compatible with the standard software, as described in Answer 9 above. Limited assistance with installation and with connecting to the wireless network is available through ResNet and the Technology Support Center.
- Q11: Can I use an older OS?
- A11: Do not use old operating systems that are no longer supported by their vendors, since they are unsecure when connected to the Internet. OIT supports only the software listed in this document.
- Q12: Is there a place on campus that will service computers?
- A12: You can contact the Technology Support Center for assistance and recommendations for computer repair. Located in the Clough Commons, the Technology Support Center can provide you with a number of local vendors if your computer is no longer covered under warranty, including Bell Techlogix, a third-party repair vendor at the Technology Store. You can also contact ResNet (wrecktechs.gatech.edu/) to have an RTA conduct a diagnostic check.
- Q13: Where can I find more information about using the Georgia Tech network and computer systems?
- A13: The following web pages contain detailed information and links to other useful pages: www.security.gatech.edu (GT Cybersecurity), wrecktechs.gatech.edu/ (ResNet), and www.sco.gatech.edu (Student Computer Ownership).
- Q14: What software can I install to prevent virus or malware from infecting my computer?
- A14: OIT and ResNet recommend and support Microsoft Security Essentials for PCs and Sophos and Apple Xprotect (built in) for Macs to help guard against viruses, spyware, and other malicious software (www.oit.gatech.edu/service/desktop-laptop-security/anti-virus-software)
- Q15: Should I purchase a USB flash drive?
- A15: Yes. These devices are a great option for removable storage. However, they can be easy to lose, so give great care to the type of information you store on these devices. Warning: These devices can transfer viruses from one machine to another, so it is important to use antivirus software, which will automatically scan these devices.
- Q16: How can I protect my laptop from theft?

A16: Always lock your laptop to something sturdy using a cable lock. In addition, there are products available for tracking stolen laptops. Laptops should also be registered with the Georgia Tech Police Department (see: police.gatech.edu/services/property/index.php) to aid recovery when lost or stolen. Additionally, it is advisable to set a login password for each operating system on your computer to prevent exploitation of your information if the laptop is stolen.

Q17: Are there any advantages to purchasing either a Mac or a PC?

A17: Generally, the selection of a Macintosh or PC notebook is an individual choice. However, some departments may have specific recommendations. Contact your academic advisor for information to determine specific requirements and recommendations.

Q18: What are the guidelines for using my computer for gaming, business or other alternative functions?

A18: Users of the Georgia Tech network agree to comply with the Georgia Tech Computer and Network Usage and Security Policy. Every user is responsible for reading and complying with this policy. The policy can be found at the following location: policylibrary.gatech.edu/computer-and-network-usage-and-security. If you have questions on a specific use, contact the Technology Support Center.

Q19: What kind of system recovery options should I have if my machine does not have a recovery partition?

A19: You will need to have all your installation media available in case you need to reinstall your operating system.

Q20: How do I make certain my software is up to date?

A20: Secunia, for Windows, will check to see if your software is up to date. This is a free utility. AppFresh for Mac is also recommended.

Q21: Is there a place on campus where I could get my computer cleaned or where they can help me improve its performance?

A21: Yes, ResNet will assist you with this.

Q22: Can I use a router or switch in my dorm room?

A22: Routers are allowed, but a wireless router must have the Broadcasting Radio disabled to meet Georgia Tech Policies and Requirements. However, it is the student's responsibility for any activity from his/her IP. A switch will not work on the Georgia Tech START (LAN wired) network.

Q23: What is the difference between online storage and online backup?

A23: Online storage can either be an additional space to store documents (like an additional drive) or it can synchronize files between your computer and a cloud based storage system. With online storage, if you delete files they are both flagged for removal and hidden from view, or are immediately written over. Some online storage solutions will retain backups but there is no guarantee that the files are retained, especially if there is a space limitation.

With online backup, even deleted files are retained until the end user intentionally navigates to that specific file and selects to purge the file securely. The best online backup systems do not impose a limit on the size of space you are utilizing for your backup and will keep multiple recoverable versions of your documents so that you have additional methods to undo changes or recover previous versions.

IMPORTANT CONTACT NUMBERS AND ADDRESSES

More information:

Georgia Tech Student Computer Ownership

- Website: www.sco.gatech.edu

Technical/connectivity/compatibility questions:

Technology Support Center

- Telephone: 404-894-7173
- Email: support@oit.gatech.edu
- Website: tsc.oit.gatech.edu
- Walk-in support: Technology Support Center (in Clough Commons)

ResNet (Campus Services)

- Telephone: 404-894-0044
- Email: support@resnet.gatech.edu
- Website: wrecktechs.gatech.edu
- Walk-in support:
 - East Campus: Upper Level of Brittain Dining Hall (between classroom and vending machines)
 - West Campus: Curran Parking Deck 8th Street Entrance next to Westside Market

General pricing/availability/ordering:

Technology Store @ Georgia Tech (Barnes & Noble @ Georgia Tech)

- Telephone: 404-894-2377
- Fax: 404-894-2530
- Email: Tech.Center@bks.gatech.edu
- Website: techstuff.gatech.edu

Bell Techlogix (Third Party Support):

- Telephone: 404-894-2377
- Email: gatech@belltechlogix.com

Financial aid/alternative loans:

Georgia Tech Office of Scholarships and Financial Aid

- Telephone: 404-894-4160
- Email: finaid@gatech.edu
- Website: www.finaid.gatech.edu