COMPUTER REQUIREMENT FOR STUDENTS

All students in the School of Architecture should consider obtaining their own personal computer.

Use of digital tools and technology in the School of Architecture is significant, especially for students of design (Architecture and Landscape Architecture), and as early as the first year of study for both undergraduate and graduate students. Computer use is far more intense than basic office and productivity work, and will include significant use of graphics tools like the Adobe suite, CAD, 3D modeling, GIS, and more. To be effective and not frustrated with your computer’s working performance, this requires a higher specification, and higher cost, than what would be required of some other academic areas. All incoming students should read through the information on this page and look to purchase a computer according to this expectation.

Approximate costs to expect for a computer capable of the work that you will need to do, plus costs for software that you will need to buy, are as follows:

<table>
<thead>
<tr>
<th>Students</th>
<th>Computer</th>
<th>Software</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design students:</td>
<td>~$2,300 - $2,800</td>
<td>~$450 [see note]</td>
<td>$2,850 - $3,250</td>
</tr>
<tr>
<td>Non-design students:</td>
<td>~$1,800 - $1,900</td>
<td>~$255 [see note]</td>
<td>$2,055 - $2,155</td>
</tr>
</tbody>
</table>

Please note that these are rough averages based upon current offerings and are intended only to give a general picture of price. These only include the most common hardware and required software. Individual needs may differ.

[note] The prices shown above indicate only first-time purchase costs, not ongoing costs. Some software, such as the Adobe Creative Cloud suite, are subscription-based and require a yearly cost. Adobe CC, for instance, is $240 for the first year (included above), and then $360 each year afterward. Most other software is a one-time purchase.

The good news is that while the School of Architecture does require software purchases, we require very few large textbooks. The money that you would be spending on expensive textbooks in other disciplines can be applied to software costs here.

Specific requirements and specifications for hardware and software are given below.

We strongly encourage students to purchase their new computers through the CAV Program at Cavalier Computers. CAV Program computers are pre-configured to meet the specifications and software options for the
School of Architecture and include additional installation and support services. See the bottom of this page for more detail on the CAV Program.

If you prefer, you can purchase your computer through other sources at educational discounts. If you choose this, however, please make sure your computer meets the appropriate specification for your group. See the table of groups and list of specifications below.

Additional resources, including computer labs, imaging, scanning, and printing facilities are available in the school. These facilities are intended as supplements to personally owned computers, not replacements for them.

A required computer orientation is held for arriving students at the beginning of the academic year.

**Selecting the right computer - which group are you?**

<table>
<thead>
<tr>
<th>Graduate Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture, Landscape Architecture</td>
</tr>
<tr>
<td>Urban and Environmental Planning students who expect to pursue GIS intensive courses.</td>
</tr>
<tr>
<td>Urban and Environmental Planning students who do not expect to pursue GIS intensive courses.</td>
</tr>
<tr>
<td>Architectural History</td>
</tr>
</tbody>
</table>
Required Computer Specification

This configuration is suitable to effectively work with the most common graphics software packages used in the school.

**Spec 1 - Design and GIS performance**

(see chart above for which levels and disciplines this applies to)

Laptop Computer

- 2.3 GHz or better Intel Quad-Core i7 processor; Windows or Macintosh
- Windows 7+ (Professional, 64-bit) or Mac OS X (10.7+) *
- 16 GB RAM ** (32 is better if you can afford it)
- 500 GB hard drive (or larger)

Desktop Computer

- 3.1 GHz or better Intel Quad-Core i7 processor; Windows or Macintosh
- Windows 7+ (Professional, 64-bit) or Mac OS X (10.7+) *
- 16 GB RAM ** (32 is better if you can afford it)
- 500 GB hard drive
- Wireless network card (please check this - this is often an add-on for desktops, but will significantly help with access to the studio network)

**Spec 2 - Standard use**

(see chart above for which levels and disciplines this applies to)

- 2.0 GHz or better Intel Dual-Core i5 or better processor; Windows or Macintosh
- Windows 7+ (Professional, 64-bit) or Mac OS X (10.7+) *
- 8 GB RAM (you might consider 16)
- 250 GB hard drive

**Recommended for All Computers**

- Wireless Network card
- 3-button mouse
- 3- or 4-year warranty strongly recommended (included in CAV program machines)
- Accessories: Cable lock, surge protector power strip
• External Hard Drive (USB) for automated backups of your computer.

* Note: For students choosing Macintosh computers, the Windows operating system is available to students at UVa for $15, and can be installed to run through BootCamp (dual-boot setup). Through this, an Apple computer can run any Windows-based software used in the school.

** Note: Many software programs used within the School of Architecture are fairly memory-intensive. 16 GB or more is recommended for best performance and longevity of your computer, especially for those using CAD, GIS, and similar software. More RAM is optional for those wanting to push these programs even further.

Both Macintosh and Windows platforms are supported in the school.

Design students (Architecture and Landscape Architecture) do need to be able to run Windows-based software. If desired, this can be accomplished on Apple computers using BootCamp (a dual-boot Mac and Windows configuration) or Parallels or VMWare Fusion. Some students find this very workable. Some do not.

NOTE: All computers brought must be able to run regular software. Tablet computers, netbooks, chromebooks, etc. that cannot run a full Windows or Macintosh Operating System and cannot install regular software will not be adequate.

NOTE for all Design Students:

• An external monitor screen (20”+) may be helpful to put on your studio desk, even if you have a laptop. Design students find large screens beneficial for graphics work. This is optional, but may be very useful. Monitor options are available with your CAV Program purchase.
• We recommend students rebuild / cleanup their computer at the beginning of each year.
• Consider a RAM upgrade at the beginning of your 3rd or 4th year.

Please read the following advice on purchasing a computer:

If you are in the market for buying a new computer, there are a few things to consider before purchasing.

How long will you keep this machine?

The longer you wish to keep this machine viable, the higher (and more expensive) you will likely wish to configure it. Processor, RAM, and hard drive capacities double about every 18 months (Moore's Law). After 2-3 years, your machine may be noticeably slower than the newer ones. (Note the deferral recommendation for undergraduates above.) The higher-end you make it to start, the longer it will stay competitive. This of course means more money up front. A good general rule is to buy the most powerful machine that you can reasonably afford if speed and longevity are factors for you.
What will you primarily do on it?

Some people will use their computer for email, web research and word processing. Others will be generating complex maps and images, 3D CAD models, and computer animation or digital video. For more graphics intense work, faster machines, larger hard drives, more RAM, and faster/larger graphics cards will be desired. Currently, the first year of the undergraduate design program sees less intense use with more graphics work introduced in the second year requiring much higher levels of computer performance.

Windows or Macintosh?

The school and university support both operating systems, and many software packages run on both, but some important packages for CAD, GIS, and building analysis run only on the Windows platform. Students must be able to run Windows-based software to complete work in many required courses. Students preferring the Apple platform will need a model that also runs Windows.

All current Apple hardware is capable of running both operating systems through either BootCamp, a virtual machine (VM Ware Fusion or Parallels), or both. The Windows operating system can be purchased by any active student at UVa for $10 through Cavalier Computers in the university bookstore, so there is no need to purchase this at retail prior to coming to UVa.

Do I need to buy software?

Yes. The School of Architecture requires all incoming students to purchase two software titles:

- Adobe Creative Suite Design Standard (Photoshop, Illustrator, etc.)
- Microsoft Office

Adobe Creative Suite can be purchased through Cavalier Computers at the University Bookstore by way of a special pricing contract available for students at the university. There are several versions available, including Design Premium and Design Standard. Adobe Creative Suite Design Standard meets the requirement for students in the School of Architecture. Design Premium adds extra software titles and extra features that some students may want, but this version is not required.

The University holds a Campus Agreement with Microsoft that includes Microsoft Office for both Windows and Macintosh. Students can get a copy of Office for their personal computers under this agreement for $10. See ITC’s Campus Agreement page for details and information on how to get the software. The Windows operating system is also available under this contract for $10.

Is design and analysis software (CAD / GIS) available?

Yes. Through free downloads and other contracts with vendors, all students can get a range of specialty software products, including CAD, GIS, and graphics software, for free or at specially reduced prices. These products are not required of all students, but may be required or recommended for purchase for individual courses.
Software Requirement

School of Architecture students should also purchase both Microsoft Office and the Adobe Creative Cloud.

Both are available through the University (see Cavalier Computers) at negotiated student pricing contracts. Microsoft Office is available for $15 and the Adobe Creative Cloud is available for $240 (first year cost, $360 each additional year). Computers purchased through the CAV Program will include options for both of these at time of purchase.

Additional software may be required by other courses. Some software is free, like the entire Autodesk (AutoCAD) suite. Some must be bought.

The most common additional software for Architecture and Landscape Architecture design students are Rhino (a 3D CAD modeling program, $95), which can be purchased and included in the box when you buy through the CAV Program, and V-Ray (a rendering program for Rhino, $103, purchased separately).

A list of software available to students, along with links to download or purchase, is at our SARC Software page (currently being updated) this information is as follows:

The School of Architecture uses and maintains an extensive list of design and analysis software, available on both lab computers throughout the building as well as for individual student-owned laptop computers. Much of this software is available for free to students for their laptops, and what is not free is usually available at student pricing.

Software for your personal computer

Through contracts with vendors, the University and the School of Architecture are able to make certain software available FREE or at significantly reduced prices to students and faculty registered in its programs. These software programs may be installed on a personal computer, whether it is in the school (laptop/studio) or at home. Some licenses are timed and must be renewed.

For students, many software companies provide educational discounting. There are many sources for finding these deals, including web sites and storefronts in addition to the manufacturer’s sales department. UVA students have access to Cavalier Computers in the University Bookstore. Many titles, including Adobe Creative Suite, can be found here at prices far below market retail.
<table>
<thead>
<tr>
<th>Software</th>
<th>Vendor</th>
<th>Price</th>
<th>Notes</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>UVA site-licensed software</td>
<td>UVA ITS Software Central</td>
<td>Free</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Microsoft Office (Windows, Macintosh)</td>
<td>Cavalier Computers</td>
<td>$15</td>
<td>Available to all students and faculty for personal use under the university Campus Agreement.</td>
<td></td>
</tr>
<tr>
<td>Microsoft Windows 7 or Windows 8</td>
<td>Cavalier Computers</td>
<td>$15</td>
<td>Available to all students and faculty for personal use under the university Campus Agreement. Use as an upgrade from a previous verion of Windows or to run Windows anew on an Apple BootCamp partition.</td>
<td></td>
</tr>
<tr>
<td>Adobe Creative Cloud</td>
<td>Cavalier Computers</td>
<td>$360</td>
<td>The full Adobe Creative Suite, latest versions, cloud subscription required for all students. (Photoshop, Illustrator, InDesign, Acrobat Pro, Dreamweaver, Flash, Fireworks, Muse, Premiere, and many more)</td>
<td></td>
</tr>
<tr>
<td>ArcGIS Suite</td>
<td>UVA Software Gateway</td>
<td>Free</td>
<td>Geographic Information Systems software. Students and faculty can get this on their laptops for free. License-served through On-Grounds Network: yearly renewal required.</td>
<td></td>
</tr>
<tr>
<td>Autodesk</td>
<td>Autodesk Education Community</td>
<td>Free</td>
<td>AutoCAD, Revit, Maya, Ecotect, Civil3D, more. Individual student and faculty license</td>
<td></td>
</tr>
<tr>
<td>Bentley</td>
<td>Get School Access Code HERE, then see Additional Information</td>
<td>Free</td>
<td>MicroStation CAD, Bentley Architecture, Generative Components, GeoPak Site/Civil, Tas Simulator. Individual student and faculty license</td>
<td>Bentley STUDENTserver</td>
</tr>
<tr>
<td>Rhino</td>
<td>Cavalier Computers</td>
<td>$95</td>
<td>Individual student and faculty license.</td>
<td></td>
</tr>
<tr>
<td>SketchUp</td>
<td>Sketchup.com (Free version) or see additional information</td>
<td>$0 - $49</td>
<td>Standard Student version: $0, Pro-version: $49</td>
<td>Pro-Version</td>
</tr>
<tr>
<td>Maxwell Render</td>
<td>Contact Eric Field for codes and access (see additional information)</td>
<td>Free</td>
<td></td>
<td>Student License Area</td>
</tr>
<tr>
<td>V-Ray</td>
<td>V-Ray Academic</td>
<td>$103</td>
<td>Annual fee.</td>
<td></td>
</tr>
<tr>
<td>Google Earth Pro</td>
<td>Contact Eric Field</td>
<td>Free</td>
<td>Pro version, with GIS import, hi-res imagery and more</td>
<td></td>
</tr>
<tr>
<td>Catalyst</td>
<td>SARC Software Downloads</td>
<td>Free</td>
<td>Prepare 3D models for the Dimension 3D printer.</td>
<td></td>
</tr>
<tr>
<td>Sefaira</td>
<td>Contact Eric Field</td>
<td>Free</td>
<td>Cloud-based Building Performance / Passive Design simulation</td>
<td>Sefaira website</td>
</tr>
</tbody>
</table>

If other software is required, information will be provided in the individual course syllabi.

The University provides basic utilities, such as for virus protection and off-grounds access, for free to students. See ITS Software Central for details.
The CAV Computer Program

The School of Architecture has partnered with UVa's Cavalier Computers to offer a line of pre-configured computers for students to purchase under the university's CAV Program.

Under this program, students can choose from one of a handful of computer configurations that out-of-the-box meet the School of Architecture's computer requirement, including some of the base software needed for School of Architecture programs.

The CAV Program computers offer the following benefits to students:

- Pre-configured computers that meet the School of Architecture’s computer requirement
- Competitive educational pricing through the UVA Bookstore / Cavalier Computers
- Apple and Dell platforms available
- Microsoft Office pre-installed (under UVA educational contract pricing)
- UVA customizations pre-installed
- Option for Adobe Creative Cloud, included in the box (UVA student license pricing, select at checkout)
- Option for Rhino (for design students) included in the box (Student license pricing, select at checkout)
- 3- or 4-year system warranty included (option to select which)
- Accidental Damage warranty included.
  Additional benefits:

- Authorized warranty service on-campus through Cavalier Computers
- A free loaner computer while yours is being fixed
- A restore-disk to get you right back to day 1 with all included software, in the event of an emergency.
- and more.

Additional Services:
Cavalier Computers is now also providing additional for fee services including:

- Windows OS installation (for BootCamp Apple computers)
- Individual software installation service - help installing your software
- Personal Backup service - installation and setup of a personal backup for your computer
- and more.

See the CAV Program page at Cavalier Computers for details.
Choose Architecture to see the options configured for you.