Computer Specifications

University of Arkansas
School of Architecture
Department of Architecture
Spring 2008

Purchasing your first computer:

The following comparisons and specifications are provided as a guideline for purchasing a personal computer that you will use in your design studio courses. These guidelines reflect currently available hardware and software. However, the computer industry is continuously evolving. As software is improved, offering more complex programs and expanding your possibilities, more powerful computers are required to run these programs. The computer industry introduces new technology and higher performance standards on an almost monthly basis. As a result, a computer purchase must be seen as a starting point with the understanding that your system will need to be upgraded as technology changes.

When making an initial computer purchase it is important to take into account the expandability of the system. How much RAM (random access memory) can be added in the future? Can a second hard drive be added? Can the video card be replaced? Are there extra slots for peripheral ports (i.e.: for scanner, printer, etc) A wise computer purchase will allow for upgrades along the way; otherwise the computer will quickly become obsolete.

Current industry trends suggest that any computer purchased today will need to be upgraded within one year and will be upgradeable for only three to four years. Anyone wanting to install and keep current with software releases should plan on purchasing a new computer every third or fourth year. New software almost always requires more powerful computers to make use of increased speed and capabilities. Today's graphics programs expect minimum system requirements for use that exceed almost any computer made more than four years ago. And the rate at which technology improvements are made is increasing dramatically.

With all of this in mind, we have provided information to assist you in the initial purchase of a computer. In order to prepare students for the architecture profession, University of Arkansas' School of Architecture is committed to exposing students to the most current CAD/CAM and graphic visualization technology available. As a result, it is realistic to expect that the computer you purchase in your Second year will need to be upgraded before the end of your Third year. It is likely that a student will want to purchase a new computer in their Fourth or Fifth year as they become more proficient and the programs they use become more sophisticated. Any future upgrades you will make to your system should be considered when planning a long-term budget for computer maintenance.

Laptop vs. Desktop:

ISSUES:	LAPTOP:	DESKTOP:
Expandability	Limited number of ports for peripherals. Limited memory and storage expansion. Processor, display, and video hardware not upgradeable.	More expansion options for RAM, space for additional drives, expansion cards, and ports.
Monitor	Smaller screen, but with very high resolutions available; may consider an external monitor.	LCD monitors available 19" and up with very high resolutions.
Processor	Intel and AMD dual- and multi-core mobile processors are available from from most laptop manufacturers. Prices increase substantially as you get closer to the "fastest" available.	Desktop multiple-core processors are significantly faster and less expensive than their mobile counterparts. Intel and AMD both produce multiple-core processors for most desktop manufacturers.
Memory [RAM]	Most laptops, like desktops, are limited to 4GB of memory (due to limitations of 32-bit operating systems). But laptops usually only have 2 available slots for memory, making upgrades very costly. We suggest a minimum of 2GB.	Also limited to 4GB, but mid-range desktops generally have 4 slots available. Again, we suggest a minimum of 2GB.
Hard Drive	Currently laptop hard drive capacity is upward of 300GB. Most laptops currently do not support additional internal hard drives, but external ones are available for $100-$200.	Desktop hard drives are available with much higher capacity than their laptop counterparts. They are also cheaper, usually faster, and desktops usually allow for adding additional internal drives.
Video Adapter	You will need at least 128MB of dedicated video [256MB suggested]. Not upgradeable in laptops.	You will need at least 128MB of dedicated video [256MB+ suggested]. Desktop video cards are easily upgradeable.
Networking	All laptops ship with 10/100/1000 Ethernet ports. Most also have 802.11 wireless adapters	All desktops have 10/100/1000 Ethernet ports.

	built-in as well.	
Storage	Most laptops come with at least a CDRW or a DVD/R drive. Possible but pricey to upgrade. External drives are available. Portable storage is handy as well [USB flash drives and hard drives].	All desktop optical drives are affordably upgradeable. CDRW/DVD, DVD/RW, and HDDVD drives are available builtin.
Portability	Easily transportable; Wireless network access.	Not portable.
Price	You pay extra for portability. Laptops are typically 30-50% higher than a desktop with similar specs. Price increases as the size/weight decreases.	Pricing is substantially lower than laptops with similar specs. More cost effective over time because of overall expandability and ease of upgrades and repairs.

Minimum Hardware Requirements:

	LAPTOP:	**DESKTOP:**
Processor	Dual or Quad core Intel or AMD processor	Dual or Quad core Intel or AMD processor
Hard Drive	Recommend at least 160GB	Recommend at least 160GB
Memory (RAM)	Recommend at least 2GB	Recommend at least 2GB
Video Adapter	Recommend dedicated video due to graphics intensive applications. Minimum 128 MB dedicated video memory.	Recommend dedicated video due to graphics intensive applications. Minimum 128 MB dedicated video memory.
Storage	CDRW/DVD drive required. DVD/RW recommended. Will also need portable flash drive with at least 1-2 GB capacity.	CDRW/DVD drive required. DVD/RW recommended. Will also need portable flash drive with at least 1-2 GB capacity.
Monitor	Minimum SXGA [1280x1024]	Minimum SXGA [1280x1024]. At least 19" LCD recommended.

Network	Ethernet ports are required. All new laptops have this already.	Ethernet ports are required. All new desktops have this already.
Cable	10-15 ft. cat5 cable required for studio network connections.	10-15 ft. RJ45 cat5 cable required for studio network connections.

Operating System: On June 1, 2008 new computers will no longer be shipping with Microsoft Windows XP, and will instead ship with a version of the Windows Vista OS. There are several versions of Vista available, but the University of Arkansas strongly suggests that students use Vista Business or Vista Ultimate. Home versions of Vista will not allow proper network connectivity in the UA's computing environment and and therefore are not fully supported by UA Computing Services. **School of Architecture students are required to run XP Professional, Vista Business, or Vista Ultimate.**

Please Note: If your computer has XP Home or Vista Home editions, upgrade licenses can be purchased on campus with educational discount pricing.

Suggested Software:

Computer-Aided Drafting Program:

AutoDesk Architecture SV (1-yr. license recommended)	-- $159 - UA Computer Store
Bentley Microstation	-- Free to students - UA Download
Graphisoft ArchiCAD	-- Free to students - UA Download

Building Information Management (BIM) Software:

AutoDesk REVIT SV	-- Free Academic Version Download *
Bentley Architect	-- Free to students - UA Download

Word Processing / Office Programs:

MS Office 2007/2008 (Windows/Mac) Standard Student Select	-- $79.95 - UA Computer Store

Image Editing / Desktop Publishing:

Adobe CS3 Design Standard Student License	-- $229 - UA Computer Store

3D Modeling Program:

AutoDesk VIZ (Student Version)	-- Free Academic Version Download *
Bentley Generative Components	-- Free to students - UA Download
Google SketchUp **(required)**	-- Free download - Google Download

Structural Design Program:

Multi-Frame	-- Free Academic Version Download *
Bentley STAAD.Pro	-- Free to students - UA Download

*A user account must be set up on the originating site before downloading software.

Optional Software:

3D Modeling Program:

Rhino / Flamingo	-- $295
AutoDesSys Form-Z, MAYA, 3D Studio Max, or equivalent	

Accessories (optional):

Check UA Computer Store website for links to HP and Epson printers and scanners.

InkJet printer

Scanner

Where to purchase (suggestions only):

Hardware and software at educational prices:

University of Arkansas Computer Store

AutoDesk Student Engineering & Design Community

Dell Computers (Higher Ed Division):

UA Computer Store - 2008 Architecture Student Specials

Mac Computers:

Mac Warehouse/CDW

University of Arkansas Apple Store