Q: I hear that Windows runs on the Apple Mac computers. Will a Mac laptop work for me if I'm an incoming engineering student?

Response by Prof. M. C. Rosen, Director of Information Technology, U.Va. Engineering

A: Most of the software used throughout the Engineering School curriculum is available in editions that run on Microsoft Windows. This general compatibility is not the case for the Mac OS or Linux.

If you feel comfortable providing your own self-help technical support, and are willing to find creative ways to get your work done should it turn out that a particular program or device does not operate properly, then maybe you are a Mac person.

It is possible to make the Mac work in most cases-- but it depends on your familiarity and interest to work with computers – and that you are comfortable being more self-supporting. That is up to you and how you feel about it.

Last cycle, Fall 2016, approximately 20% of U.Va. Engineering students brought a MAC. From what I have heard, Mac adopters make out all right in general.

In addition, students enrolled in different majors use a different mix of software applications, but I cannot recommend computer hardware or a non-Windows operating system based on majors. This is because about half of our incoming students don't know what major they want. Another factor is that a portion of those that targeted a particular major when applying to U.Va. Engineering wind up changing their mind once enrolled after learning more about the various choices in majors and minors that we offer. 

As an example, one of our most popular minors is the ‘Engineering Business Minor’, which includes courses from U.Va.’s Commerce School that has similar recommendations supporting Windows-based computers.

Running Windows on a Mac

Technically, there are a number of ways to make it work.

There is a remote access method to some Windows editions of U.Va. licensed engineering, math and science software at U.Va. These software titles can be accessed and run from a Mac or a PC. It is known as the U.Va. HIVE. More information is available at: http://its.virginia.edu/hive/
Unfortunately, not all of the titles used in engineering courses are part of that initiative, and the potential need to run some Windows application software on your laptop remains.

**If you are interested in pursuing the MAC option, here is some detailed information that you might find useful:**

[1] An upgrade copy of Microsoft Windows is available to our students. The licensing cost for one copy is covered under a special U.Va. student program and it can be used on a Mac. More information is available at: [http://its.virginia.edu/software/studentoffice/](http://its.virginia.edu/software/studentoffice/)

[2] Running Windows under a virtualized environment is one path. The leading choices are **Parallels**, **Fusion** & **VirtualBox**. These three products have the technical capability of running Windows on a MAC. When you are ready to start working with one, I recommend that you first check that your laptop’s operating system version is supported as a host operating system of the virtualization product. Parallels is probably the most popular with our students. (Emulation software such as Codeweavers CrossOver is less likely to be successful.)

Many Windows applications will work under such virtualization. However, software versions are updated each year and there is no way to test ahead that all the Windows-based software or your devices (incl. some peripherals) will work correctly in that mode, and that the virtualization not interfere when you are trying to work in the Mac mode.

The use of **Parallels**, **Fusion** & **VirtualBox** consumes system resources (CPU, RAM) when running Windows sessions/software. The choice of MAC hardware model is relevant. *For example, an older MacBook Air configured with 2GB RAM would not be sufficient.*

Note too that keyboard mappings are different as well as the mouse operations on the Mac compared with Windows. When running Windows software or running even just in virtualization modes, this takes some getting used to even for some experienced users.

[3] An alternative that only shares hard drive space, but not system resources is Apple's Boot Camp.

Boot Camp is included by Apple in its operating system, but Apple's support does not cover a lot of questions on Windows running on their hardware, Microsoft doesn't support Windows running on Apple hardware, and the U.Va.'s ITS Computing Help Desk ([http://its.virginia.edu/helpdesk/](http://its.virginia.edu/helpdesk/)) does not support dual boot or virtualization modes.


This material covers which Apple laptops are compatible with which versions of Windows.

The bottom line is with either the virtualization mode or dual boot mode, you are on your own to make it work. Please read the links below for more information.

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*Parallels: [https://www.parallels.com/products/desktop/](https://www.parallels.com/products/desktop/)

**VMWare Fusion:** [https://www.vmware.com/products/fusion.html](https://www.vmware.com/products/fusion.html)

***VirtualBox is a free download. [https://www.virtualbox.org/wiki/Downloads](https://www.virtualbox.org/wiki/Downloads)
Reference Links:

Apple Boot Camp Installation Guide/Getting Started: Information on Boot Camp, for dual booting Microsoft Windows and Mac OS X:
http://www.apple.com/support/bootcamp/

Article: “Parallels, VMware, VirtualBox and Boot Camp compared” - 15NOV2016 by Macworld.co.uk
http://www.macworld.co.uk/feature/mac-software/best-virtualisation-app-run-windows-on-your-mac-boot-camp-vmware-parallels-2016-3626493/

Article: ‘How to Run Windows on a Mac” - 07MAY2013 by PCMag.com
http://www.pcmag.com/article2/0,2817,2344661,00.asp

Article: “How to install Windows on a Mac” – 21APR2017 by Macworld.co.uk
http://www.macworld.co.uk/how-to/mac/how-run-windows-on-mac-vmware-boot-camp-virtualbox-3497251/

Information on Computers for Incoming 1st Year Students arriving August 2017
http://infotech.seas.virginia.edu/firstyear
U.Va. School of Engineering and Applied Science's web site
http://www.engineering.virginia.edu

Versions:
Version-1 28APR2017