The Masters of Science in Business Analytics (MSBA) Program requires extensive computing and, therefore, a laptop with suitable capabilities. You are making a significant investment in your education by pursuing a business analytics degree and so it is wise to support that investment by ensuring that your computer’s capabilities permit you to complete all coursework in a timely fashion with high quality results. This document gives guidance to ensure that your existing computer or a new computer that you may purchase will enable your success in the MSBA Program. Requirements for a laptop computer are outlined later in this document, but these points summarize the general content of this document:

- Please pay close attention to the laptop requirements below: a computer that does not meet the requirements listed below will either run slow or not at all.
- Some software used in the MSBA program will run only on a Windows operating system, and so it is mandatory to run a Microsoft Windows operating system on your laptop.
- We strongly recommend a laptop whose native operating system is Windows, although you may use a Mac laptop that meets the requirements below which include (1) the capability to run Apple Boot Camp configured to run one of the approved Windows operating systems listed below and (2) an appropriate NVIDIA graphics card:
  - Current Apple offerings do not include NVIDIA graphics cards which are required for this program. If you need a new computer, then you must, therefore, purchase a native Windows computer. One computer meeting MSBA specifications is referenced below.
  - Some older Mac laptops do have NVIDIA graphics cards and may be sufficient in that regard providing they meet the other requirements below and have sufficient disk space that can be dedicated to this program.
- If your computer is more than three years old, then we recommend that you replace it even if it might satisfy the requirements in the table below: older computers tend to slow down which will compromise your ability to do coursework at a reasonable pace.
- To eliminate possible security and software conflicts, it is highly recommended that your Windows environment be dedicated for Mason School coursework only, and not also used for personal or business purposes.
- Keep in mind that your computer will execute programs faster if your processor is faster and has more cores, and as RAM is increased, both of which will allow you to complete your coursework more efficiently and with higher quality solutions (by permitting more improvement iterations).
## Computer Requirements Specifications

<table>
<thead>
<tr>
<th>Computer Attribute</th>
<th>Minimum Specifications</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel i7 2.4 GHz, 64-bit, with 4 cores</td>
<td>Intel i7 3.0 GHz, 64-bit, with 4 cores</td>
</tr>
<tr>
<td>RAM</td>
<td>8 GB</td>
<td>16 GB</td>
</tr>
<tr>
<td>Hard Drive Capacity</td>
<td>750 GB (Mac users must have at least 500 GB on the Windows partition of their hard drive)</td>
<td>1 TB</td>
</tr>
<tr>
<td>Graphics Card</td>
<td>NVIDIA Graphics Card from the list on the web page below</td>
<td>NVIDIA Graphics Card from the list on the web page below</td>
</tr>
<tr>
<td>Wireless Connectivity</td>
<td>802.11 b/g</td>
<td>802.11 b/g</td>
</tr>
<tr>
<td>Ethernet Wired Connection</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ethernet Cable</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>3-ft or 6-ft Ethernet cables are available at a low cost.</td>
<td></td>
</tr>
<tr>
<td>CD ROM/DVD Drive</td>
<td>8X DVD +/- RW drive</td>
<td>8X DVD +/- RW drive</td>
</tr>
<tr>
<td>Operating System</td>
<td>64-bit Windows 7, 8, 8.1, 10</td>
<td>64-bit Windows 7, 8, 8.1, 10</td>
</tr>
</tbody>
</table>

### Notes on Satisfying Computer Requirement

#### NVIDIA Graphics Card Requirements

The graphics card requirement is driven by the needs for the Artificial Intelligence course which covers neural networks. You will not be able to complete the activities for the Artificial Intelligence course without such a card so please pay attention to this part of the requirements. Directions for checking the specifications of the graphics card on your computer and comparing it to the list of acceptable graphics cards on the web page listed in the table above can be found at this link: [http://bit.ly/1ribf8W](http://bit.ly/1ribf8W). Keep in mind that a variety of operating systems exist so, if these directions do not work, please contact us. In addition to this web resource, here are a couple pointers:

- **Windows 7**: The link to Device Manager mentioned is located in the upper left area of the System Properties window.

- **Mac**: A useful quote from the web page above: “Typically, Apple makes it even easier to view specs. In OS X just click the Apple icon, and choose 'About this Mac’.”

#### CD ROM/DVD Drive & Ethernet Connection

If your laptop does not have an integral CD ROM/DVD Drive and/or Ethernet port, then you may satisfy these requirements by purchasing an external CD ROM/DVD Drive and/or a Gigabit USB Ethernet adaptor, respectively. This point is particularly pertinent for those who own a netbook or ultrabook computer. It is important for speed that these adapters support the USB 3.0 standard and that some of
your computer’s USB ports support USB 3.0 as well. External hard drives may be used as well and they should support USB 3.0.

Windows Operating System for Mac Owners

To successfully operate a Mac computer in the MSBA program you will need to configure Boot Camp, which is a program that comes with Mac operating systems that allows you to run a Windows operating system on a Mac computer. Once you are admitted to the MSBA Program and submit a deposit, you will be able to obtain a free copy of a Windows operating system that you will be able to use during the program. Windows obtained in this manner, however, is not licensed to run after you leave the program. Alternately, in order to have a persistent installation, you may purchase your own version of Windows. If you choose to procure Windows through William and Mary (please install the Professional version), you will be able to do so once you are issued a William and Mary email address and password by going to this web site, https://masonweb.wm.edu/dreamspark, and requesting an account by clicking on the appropriate link on the right hand side of the page as indicated below with the red rectangle:

Once Windows is downloaded, this site offers directions on configuring Boot Camp and installing Windows: www.apple.com/support/bootcamp. Apple support will assist you with Boot Camp installation.
New Computer Purchase

To our knowledge Apple does not currently offer a computer with an NVIDIA graphics card. So, if you have a Mac already it may have an NVIDIA card. If not, you will need to purchase a new machine that runs a Windows operating system natively.

Laptop computers running Windows natively which meet the minimum specifications above are available at a reasonable cost. For example, as of 4/27/2016 an HP Pavilion Gaming Notebook - 15-ak010nr, with an i7-6700HQ 2.6GHz processor, 8GB memory, 1 TB hard drive, and a NVIDIA GeForce GTX 950M was available from hp.com for less than $1,000. Here is a link to that computer which was active as of 4/27/2016: http://bit.ly/1qTU1r1.

If you purchase a new computer, then do not purchase Microsoft Office 365 or a resident installation of Microsoft Office. Microsoft Office will be available to you free of charge when you arrive at the Mason School.

Technology Services Contact Information

e-mail: help@mason.wm.edu
Phone 757-221-3401
Office: Miller Hall Room 2012
Hours: Monday - Friday (except holidays)
9:00 a.m. - 4:00 p.m.