

ECE3411 – Fall 2015

Lecture # 0

# Setting up Eclipse (Windows), or GCC (Mac) Setting up Atmel Studio (Windows & Mac)

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**UConn**



# Desktop C Programming

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- In the first couple of labs, we'll be writing C programs for desktops/laptops.
- Tools that we'll be using:
  - For Windows based systems → Eclipse with GCC compiler.
  - For Mac systems → GCC compiler through command line.

# Eclipse Requirements

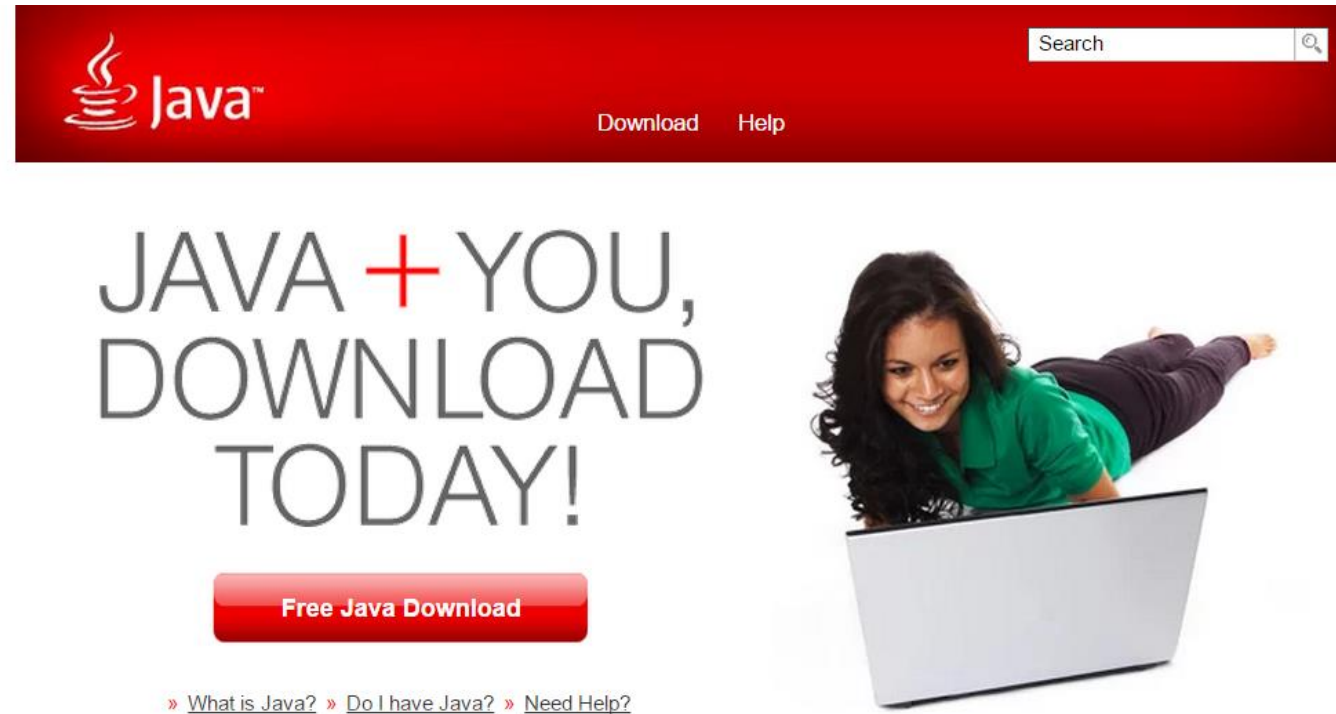
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1. Java Runtime Environment
2. GNU Compiler gcc 4.7.0+
3. Eclipse with CDT (C Development Tools)

# Java Runtime Environment

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- Go to: [www.java.com/en/](http://www.java.com/en/)
- Download & install Java for your system (32/64 bit)



The image shows a screenshot of the Java website homepage. At the top, there is a red navigation bar with the Java logo on the left, a search bar with the text "Search" and a magnifying glass icon on the right, and the words "Download" and "Help" in the center. Below the navigation bar, the main content area features the text "JAVA + YOU, DOWNLOAD TODAY!" in a large, grey, sans-serif font. The word "JAVA" is in grey, the "+" is in red, and "YOU, DOWNLOAD TODAY!" is in grey. Below this text is a prominent red button with the text "Free Java Download" in white. At the bottom of the page, there are three links: "» What is Java?", "» Do I have Java?", and "» Need Help?". To the right of the text and button, there is a photograph of a smiling woman with long dark hair, wearing a green shirt and dark pants, leaning over a silver laptop.

# GNU Compiler

- Go to: <http://www.equation.com/servlet/equation.cmd?fa=fortran>
- Download the latest version of gcc compiler for your system (32/64 bit)

| Release | Self-Extracting File             |                                  | Note  |
|---------|----------------------------------|----------------------------------|---|
|         | 32-bit                           | 64-bit                           |   |
| 4.6.4   | <a href="#">gcc-4.6.4-32.exe</a> | <a href="#">gcc-4.6.4-64.exe</a> | Including <i>gdb</i> , <i>make</i> ; 64-bit with multi-lib; OpenMP v3.0; <a href="#">neuLoop</a> ; manuals                          |
| 4.7.3   | <a href="#">gcc-4.7.3-32.exe</a> | <a href="#">gcc-4.7.3-64.exe</a> | Including <i>gdb</i> , <i>make</i> ; 64-bit with multi-lib; OpenMP v3.1; <a href="#">neuLoop</a> ; manuals                          |
| 4.8.2   | <a href="#">gcc-4.8.2-32.exe</a> | <a href="#">gcc-4.8.2-64.exe</a> | Including <i>gdb</i> , <i>make</i> ; 64-bit with multi-lib; OpenMP v3.1; <a href="#">neuLoop</a> ; manuals                          |
| 4.9.2   | <a href="#">gcc-4.9.2-32.exe</a> | <a href="#">gcc-4.9.2-64.exe</a> | Including <i>gdb</i> , <i>make</i> ; 64-bit with multi-lib; OpenMP v3.1; <a href="#">neuLoop</a> ; <a href="#">laipe2</a> ; manuals |

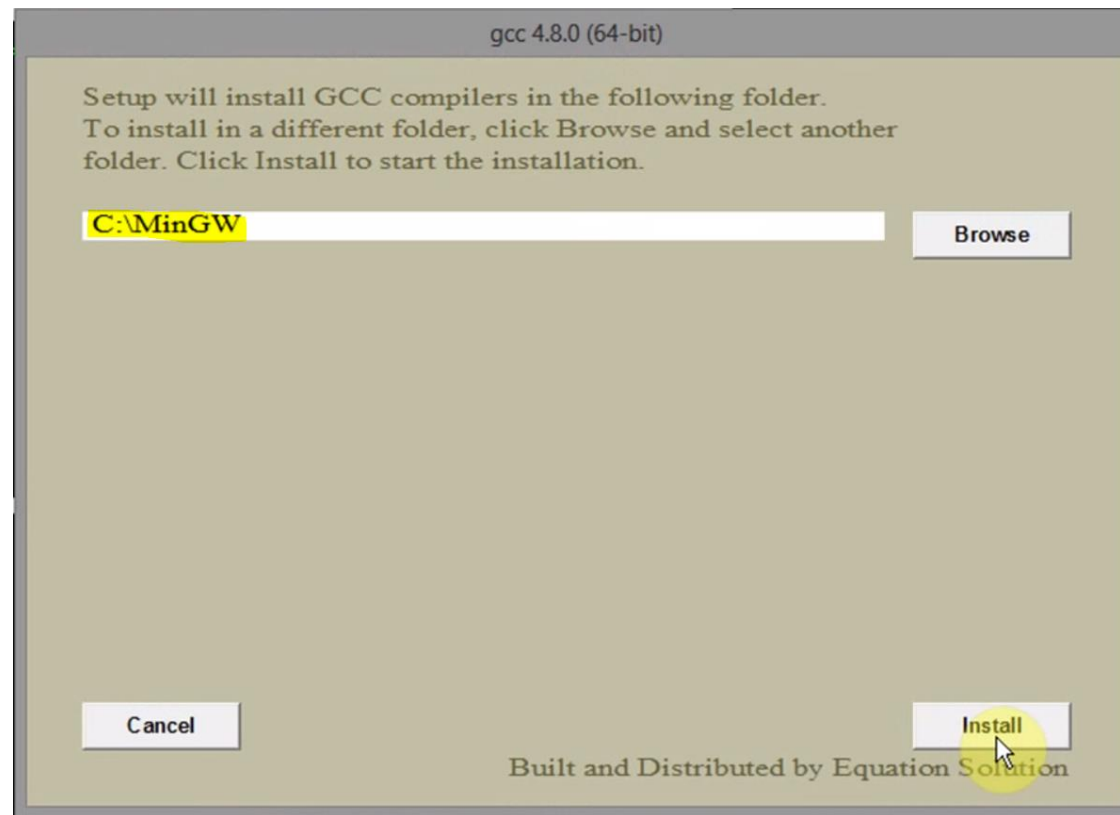
Navigation Tree

- Home
- Programming Tools
  - Fortran, C, C++
  - Debugger
  - Make
  - GNU Compliance
- Parallel Computing
- Blog
- In-Situ Evaluation
- Numerical Analysis
- Structural Mechanics
  - IFAS
  - mCable
- Write Us
  - Feedback
  - Info
  - Support
  - Webmaster
- Privacy Policy

# GNU Compiler

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- Run the downloaded setup of gcc compiler
- Change the install path to C:\MinGW as shown and click “Install”
- Notice that the path is case sensitive, and it should exactly be as shown



# Downloading Eclipse

- Go to: <http://www.eclipse.org/downloads/>
- Download **Eclipse IDE for C/C++ Developers** for your system (32/64 bit)



The screenshot shows the Eclipse IDE download page with three main options. The third option, "Eclipse IDE for C/C++ Developers", is highlighted with a yellow background. Each option includes a download icon and the supported operating systems (Windows 32 Bit and Windows 64 Bit).

| Package Name                            | Size   | Downloads       | OS Support                     |
|---|--------|-----------------|--------------------------------|
| Eclipse IDE for Java Developers         | 155 MB | 3,064,945 Times | Windows 32 Bit, Windows 64 Bit |
| Eclipse IDE for Java EE Developers      | 254 MB | 1,598,347 Times | Windows 32 Bit, Windows 64 Bit |
| <b>Eclipse IDE for C/C++ Developers</b> | 165 MB | 444,005 Times   | Windows 32 Bit, Windows 64 Bit |

- Unzip/Extract the downloaded zipped file
- Cut & Paste the extracted folder named “eclipse” to
  - C:\Program Files\ (for 64 bit system) or
  - C:\Program Files (x86)\ (for 32 bit system)
- Create a shortcut to “eclipse.exe” on desktop

# Eclipse Youtube Tutorial

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- Full tutorial for setting up Eclipse can be found at:  
<https://www.youtube.com/watch?v=KfKvDlrabUw>



# GCC on Mac

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- Turn on the terminal within Mac OS X (or Linux)
- On Mac, run the following command from your terminal to install GCC (if you don't have it already)
  - `xcode-select --install`
- Assume that we have a C source file “hello.c”. You can compile “hello.c” into an executable file called “hello” by the following command:
  - `gcc -o hello hello.c`
- If the program is compiled without errors, you can execute the program by typing:
  - `./hello <arguments if any>`

# Setting up Atmel Studio on Windows

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- Follow the Quick Start guide found at the link below:  
[Getting started with ATmega168PB](#)
- Using this guide:
  - Install the Atmel Studio on your Windows Machine
  - Run a quick test program on your Xplained Mini kit.  
(Notice that this document targets ATmega168PB Xplained Mini kit as an example, however similar steps are required for ATmega328P Xplained Mini kit.)
- Other resources include
  - [ATmega328P-Xplained-Mini UserGuide.pdf](#)
  - [ATmega328P Xplained Mini Schematic & Design Documentation](#)

# Setting up Atmel Studio on Mac

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- Mac users will need to install a Windows OS on their systems in order to install Atmel Studio
- The following slides provide detailed information on
  - Getting Microsoft Windows 7 and/or 8 that are available to students via [uconn.onthehub.com](http://uconn.onthehub.com)
  - Installing Windows on Mac machines

# Getting Microsoft Windows

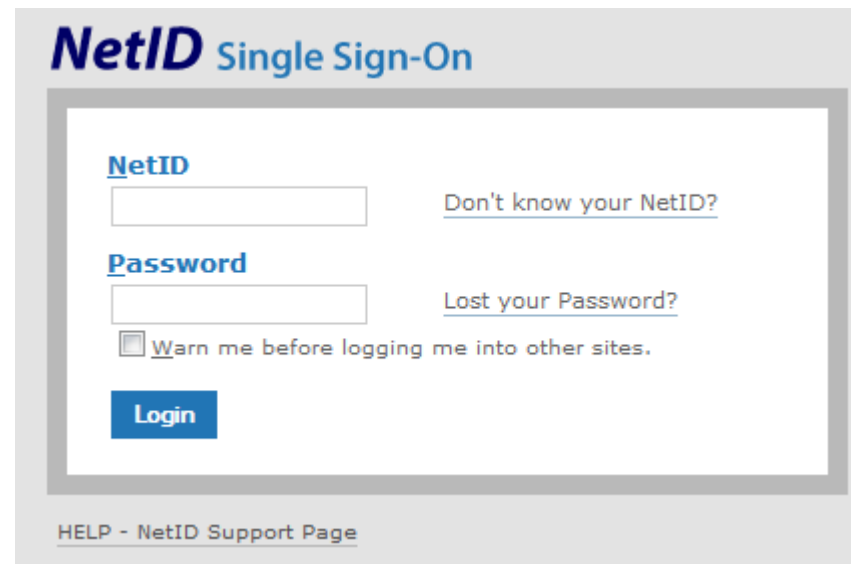
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This article explains how to download an installer and receive a product key for Microsoft Windows 7 and 8 that are available to students via [uconn.onthehub.com](http://uconn.onthehub.com).

**\*\*\*Warning\*\*\* If selecting and downloading Windows 8 for a Windows machine, the file given is for an upgrade only. If upgrading from Windows Vista or earlier, please select Windows 8 for Mac which is the full Windows 8 installer. If trying to Boot Camp a Mac, please select Windows 8 for Mac.**

## Signing In to UConn's OnTheHub Website

- To sign into UConn's software download page: [uconn.onthehub.com](http://uconn.onthehub.com)
- Use your NetID Credentials (NetID and NetID Password) to log in.



The screenshot shows the NetID Single Sign-On login page. At the top, it says "NetID Single Sign-On". Below this, there are two input fields: "NetID" and "Password". To the right of the "NetID" field is a link that says "Don't know your NetID?". To the right of the "Password" field is a link that says "Lost your Password?". Below the "Password" field is a checkbox with the text "Warn me before logging me into other sites." At the bottom left of the form is a blue "Login" button. At the bottom of the page, there is a link that says "HELP - NetID Support Page".

# Getting Microsoft Windows

- Once logged in, you should see the screen displayed below.

The screenshot shows the UConn University of Connecticut website. At the top is the UCONN logo. Below it is a 'Product Search' bar with a magnifying glass icon. A navigation bar contains 'Students', 'Microsoft', 'Adobe', and 'DreamSpark'. A large 'Microsoft' logo is on the right. The main content area is titled 'Microsoft Corporation' and displays six software products with download icons: Microsoft Office 2013, Microsoft Office for Mac 2011, Microsoft Office 2010, Microsoft Windows 8.1, Microsoft Windows 8, and Microsoft Windows 7.

**UCONN**  
UNIVERSITY OF CONNECTICUT

Product Search

**Students**

Microsoft | Adobe | DreamSpark

**Microsoft**

**Microsoft Corporation**

Professional Plus 2013  
**Office**  
Microsoft

Microsoft Office 2013

Home & Business 2011  
**Office .mac**  
Microsoft

Microsoft Office for Mac 2011

Professional 2010  
**Office**  
Microsoft

Microsoft Office 2010

8.1  
**Windows**  
Microsoft

Microsoft Windows 8.1

Pro  
**Windows 8**  
Microsoft

Microsoft Windows 8

Windows 7  
**Windows 7**  
Microsoft

Microsoft Windows 7


# Getting Microsoft Windows

## Downloading Installers and Receiving Product Keys

To download an installer:

- After logging in, select the software you wish to download and install. Click on it to proceed to the next page.
- At the next page, shown below, choose the version of the software (if applicable) and select **Add To Cart**, on the right. Make sure that the software chosen is compatible with the hardware you have installed.

### Microsoft Windows 7 Ultimate




Windows 7 Ultimate is the most versatile and powerful edition of Windows 7. It combines remarkable ease-of-use with the entertainment features of Home Premium and the business capabilities of Professional, including the ability to run many Windows XP productivity programs in Windows XP Mode. For added security, you can encrypt your data with BitLocker and BitLocker To Go. And for extra flexibility, you can work in any of 35 languages. Get it all with Windows 7 Ultimate.


Choose a language:

#### Download

[Microsoft Windows 7 Ultimate Upgrade 32/64-bit \(English\) \(Student Option\)](#) **Free**

Available to: Students

Backup media: Available in most countries 




**Students**

Microsoft | Adobe | DreamSpark

Microsoft

[Microsoft Windows 7 Professional](#)  
[Microsoft Windows 7 Ultimate](#)

### Microsoft Windows 7 Professional




Simplify everyday tasks: find something instantly, compare documents side-by-side, or easily back-up your complete system over a network. Enjoy a PC that works the way you want it to; supports 64-bit technologies and offers XP Mode for your business productivity applications. Make new things possible: watch Internet TV, pause, rewind, and record TV or use Touch to interact with your PC in new ways.


Choose a language:

#### Download

[Microsoft Windows 7 Professional Upgrade 32/64-bit \(English\) \(Student Option\)](#) **Free**

Available to: Students

Backup media: Available in most countries 




# Getting Microsoft Windows

## Downloading Installers and Receiving Product Keys

To download an installer:

- After logging in, select the software you wish to download and install. Click on it to proceed to the next page.
- At the next page, shown below, choose the version of the software (if applicable) and select **Add To Cart**, on the right. Make sure that the software chosen is compatible with the hardware you have installed.

### Microsoft Windows 8 Professional



Windows has been reimagined to focus on your life. The beautiful, fast, and fluid design is perfect for a range of hardware: from compact, touch-enabled tablets and lightweight laptops, to PCs and large, powerful all-in-ones with high-definition screens.

Choose a language: **English** ▾

Choose a platform: **Windows** ▾

#### Download


[Microsoft Windows 8 Professional Upgrade 32/64-bit \(Multilanguage\) \(Student Option\)](#) **Free**

Available to: Students

Backup media: Available in most countries ?

**Add To Cart**

### Microsoft Windows 8.1 Professional



With the new Windows, you get the best of work and play. Windows 8.1 Pro includes everything in Windows 8.1, plus enhanced features that help you manage your devices, access one PC from another, encrypt your data, and more.

Choose a language: **English** ▾


Choose a platform: **Windows** ▾

#### Download

[Microsoft Windows 8.1 Professional Upgrade 32/64-bit \(Multilanguage\) \(Student Option\)](#) **Free**

Available to: Students

Backup media: Available in most countries ?

Compatible only with  
 Windows 7

\*Cannot be upgraded from Windows XP or Vista

**Add To Cart**



# Getting Microsoft Windows

## Downloading Installers and Receiving Product Keys


To download an installer:

- Select language and platform it will be installed on.
- At the next screen, shown below, click **Check Out** on the bottom-right.

**Your Cart**

|   | Price                       |
|---|-----------------------------|
|  <a href="#">Microsoft Windows 8.1 Professional Upgrade 32/64-bit (Multilanguage) (Student Option) - Download</a><br>Date Added: 2014-10-16 12:35 PM   | Free <a href="#">Remove</a> |
|  <b>Extended Access Guarantee (24 months) - Included</b><br>24 months of access to your download and/or key. This <b>does not extend</b> the duration of time-limited licenses (if applicable). <a href="#">Learn more</a> |                             |
| <b>Subtotal: \$0.00</b>   |                             |

**Recommended For You**

|   |           |                                |
|---|-----------|--------------------------------|
|  <b>Backup disc - Microsoft Windows 8.1 Professional</b><br><a href="#">Show Details</a> ▼ | English ▼ | \$13.95<br><a href="#">Add</a> |
|---|-----------|--------------------------------|

[Continue Shopping](#) [Check Out](#)



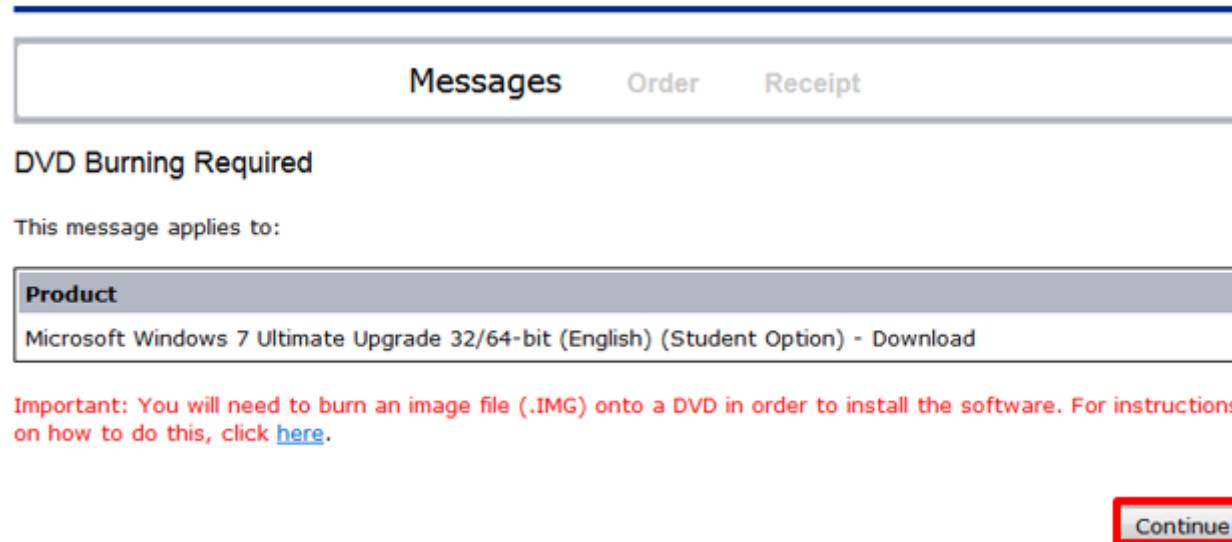
# Getting Microsoft Windows

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## Downloading Installers and Receiving Product Keys

To download an installer:

- At the next screen, you will be prompted to acknowledge that an image of the installer must be burned to install the software. You can click the link shown there for instructions on how to do that. Click **Continue** to move to the next screen.
- **Note: this step is only required for Windows 7 installs, not Windows 8.**



# Getting Microsoft Windows

## Downloading Installers and Receiving Product Keys

To download an installer:

- At the next screen, you will be prompted to sign the MS Licensing agreement. Make sure this is understood before signing and then type your username (NetID) and signature (First and Last name i.e. John Smith), before hitting **I Accept**, at the bottom.

Messages Order Receipt

Microsoft Student Option User Acceptance Form

This message applies to:

| Product  | Agreement Number | Enrollment Number |
|--|------------------|-------------------|
| Microsoft Windows 8.1 Professional Upgrade 32/64-bit (Multilanguage) (Student Option) - Download | 3045088          | 3045088           |

1. **Grant of license.** Licensor hereby grants student the right to run one copy of the version number and language of the software identified below which student has installed on student's PC per the rights granted to student by the educational institution under their volume licensing agreement. Student's right to use the software shall be governed by and subject to the relevant section(s) of the most current Product Use Rights which student can view at <http://microsoft.com/licensing/> or <http://www.msemealca.com/currentpurs.htm>. For graduating students, the right to use the software is perpetual and shall be governed by and subject to the relevant section(s) of the most current Product Use Rights, which the student can view at <http://www.microsoft.com/licensing>.

2. **Description of rights and limitations.**

- Limitations on reverse engineering, recompilation, and disassembly. Student may not reverse engineer, decompile, or disassemble the software, except and only to the extent that such activity is expressly permitted by applicable law notwithstanding this limitation.
- Separation of components. The software is licensed as a single Product. Its component parts, if any, may not be separated for use on more than one computer.
- Rental. Student may not rent, lease, or lend the software.

Date: Thursday, October 16, 2014

Username\*:   
klo12001

Signature (type name)\*:   
Kathryn Olyha

# Getting Microsoft Windows

## Downloading Installers and Receiving Product Keys



To download an installer:

- At the next screen, you will be asked for order information. Fill out the form with last name, first name, and email address (you can use any but it is recommended that you use your [first.last@uconn.edu](mailto:first.last@uconn.edu) address). Then click **Proceed With Order**.

Messages Order Receipt

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**Items** All prices are in US Dollars

|   | Amount        |
|---|---------------|
|  Microsoft Windows 8.1 Professional Upgrade 32/64-bit (Multilanguage) (Student Option) - Download  | \$0.00        |
|  <b>Extended Access Guarantee (24 months) - Included</b><br>24 months of access to your download and/or key. This <b>does not extend</b> the duration of time-limited licenses (if applicable). <a href="#">Learn more</a> |               |
| <b>Subtotal:</b>  | <b>\$0.00</b> |
| <b>Taxes:</b>   | <b>\$0.00</b> |
| <b>Total:</b>   | <b>\$0.00</b> |

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**Contact Information** Fields marked with an asterisk (\*) are required

First Name\*  Last Name\*

First Name: A valid value is required. Last Name: A valid value is required.

Email\*

Email: A valid value is required.

I would like to receive special offers and promotions from Kivuto Solutions Inc. and its partners



**Proceed With Order**

# Getting Microsoft Windows

## Downloading Installers and Receiving Product Keys

- Congratulations! You have finally reached the download and product key screen!
- The product key is shown in the main box, as depicted below. Copy this 25 character symbol into a text or word document and save it for later.

Items All prices are in US Dollars Start Download

|   | Amount                  |
|---|-------------------------|
|  Microsoft Windows 8.1 Professional Upgrade 32/64-bit (Multilanguage) (Student Option) - Download  | \$0.00                  |
|  <b>Extended Access Guarantee (24 months) - Included</b><br>24 months of access to your download and/or key. This <b>does not extend</b> the duration of time-limited licenses (if applicable). <a href="#">Learn more</a><br>Expires 2016-10-16 |                         |
| <b>Product Key:</b> Retrieving...   |                         |
| <b>Instructions:</b><br><a href="#">Customer Support Information - Windows 8.1</a>  |                         |
| <b>Messages:</b><br>• <a href="#">Microsoft Student Option User Acceptance Form</a>   |                         |
| <b>Agreement Number:</b> 3045088 <b>Enrollment Number:</b> 3045088  |                         |
|   | Subtotal: <b>\$0.00</b> |
|   | Taxes: <b>\$0.00</b>    |
|   | Total: <b>\$0.00</b>    |

- Once the product key is in the workflow ticket you can now start the Windows install process!

# Getting Microsoft Windows

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## Issues with Activation or Product Keys

- If you are experiencing issues activating your software or are in need of additional product keys, contact Kivuto Support (the company that runs OnTheHub) at the corresponding number for your country.

Contact us by Telephone



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**North America**  
**6:00am to 6:00pm (Eastern Time)**

USA/Canada (Toll Free): 1-866-435-4722  
1-888-396-1447  
Local: 1-613-526-2881

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**Europe, Middle East and Africa (EMEA)**  
**12:00pm to 12:00am CET (Central European Time)**

France (Toll Free): 0800-916021  
Germany (Toll Free): 0800-182-8612  
Spain (Toll Free): 900-809754  
United Kingdom (Toll Free): 0-800-098-8436  
Other countries not listed: +44-845-8697566

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**Asia Pacific (APAC)**  
**6:00pm to 6:00am (Singapore Time)**

Australia (Toll Free): 1-800-426-231  
Hong Kong (Toll Free): 800-968-781  
Malaysia (Toll Free): 1-800-815-302

# Installing Windows on Mac

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Boot Camp Assistant helps you install Microsoft Windows on a Mac. After installing, you can restart your Mac and switch between OSX and Windows. This article describes, step-by-step, how to install Windows on an Apple computer using Boot Camp Assistant.

## Prerequisites

- Student needs to have an Intel-based Mac.
- Student needs to have access and copy down the product key(s) necessary for the installation process
  - If the client wants Office, they will need a product key for Windows and a product key for Office.
- Data backup- HIGHLY recommended.
- 100GB free space recommended on large (500GB or larger) hard drives; 40GB minimum required on smaller drives.
- 2GB of RAM.
- Snow Leopard (OSX 10.6) or higher.

# Installing Windows on Mac

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## **Windows 7 64-bit**

- Macbook Pro (13-inch, Mid 2009) and later
- Macbook Pro (15-inch, Early 2008) and later
- Macbook Pro (17-inch, Early 2008) and later
- Mac Pro (Early 2008) and later
- iMac (21.5-inch, Late 2009)
- iMac (27-inch, Late 2009)
- iMac (27-inch, Quad Core, Late 2009)
- MacBook (13-inch, Late 2009) and later
- iMac (21.5-inch, Mid 2010)
- iMac (27-inch, Mid 2010)
- Mac mini (Mid 2010)

# Installing Windows on Mac

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## Windows 8

- Macbook Air (Mid 2011 or newer)
- Macbook Pro (15-inch and 17-inch, Mid 2010)
- Macbook Pro (Early 2011 or newer)
- Mac Pro (Early 2009 or newer)
- Mac Mini (Mid 2011 or newer)
- iMac (27-inch, Mid 2010)
- iMac (21.5-inch, Mid 2011 or newer)

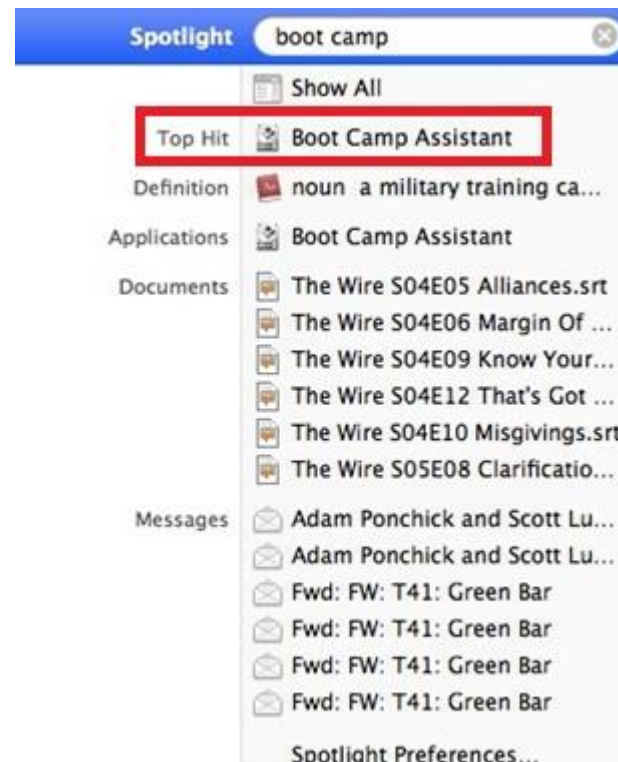


# Installing Windows on Mac

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## Running Boot Camp Assistant

- Go to the **Spotlight** and type **Boot Camp Assistant** and select it from Top Hit.



# Installing Windows on Mac

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## Running Boot Camp Assistant

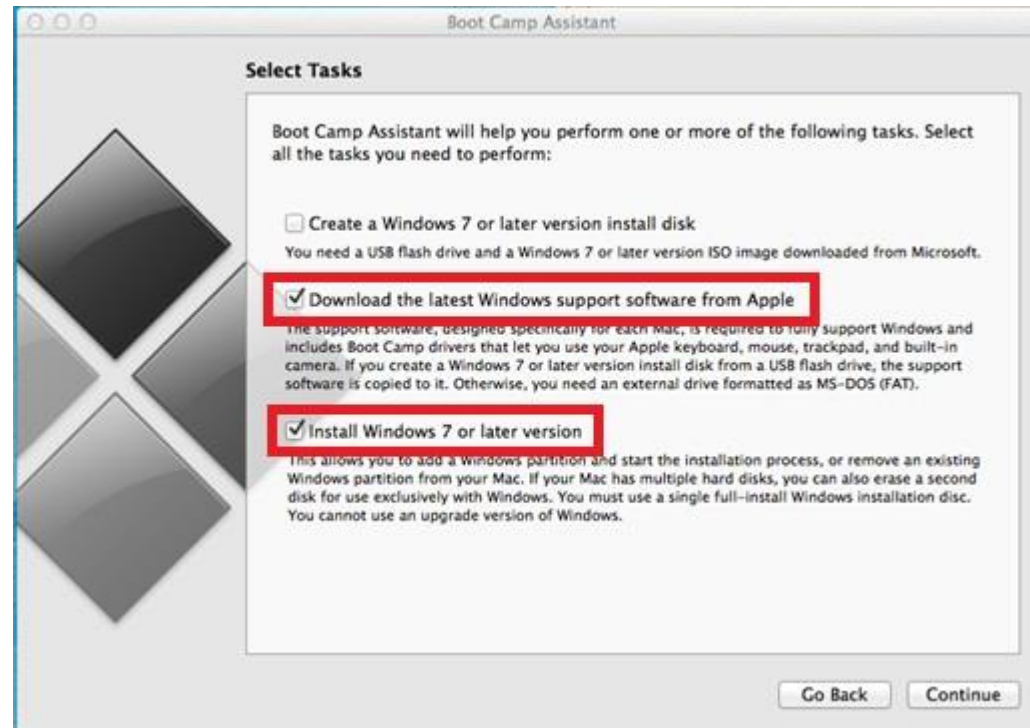
- At the Introduction screen, click **continue**.



# Installing Windows on Mac

## Running Boot Camp Assistant

- On the Select Tasks screen, check "Download the latest Windows Support software from Apple" and "Install or remove Windows 7 or later version." Click **continue**.



# Installing Windows on Mac

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## Running Boot Camp Assistant

- Download the support software to an external drive. Click **continue** to save the drivers to a USB



# Installing Windows on Mac

## Running Boot Camp Assistant

- Eject the USB you saved the drivers to and insert the appropriate version of Windows installation media.
- Set the Windows partition size to what the client requested or at least the minimum specified above for the hard drive size. Click **install** to partition the hard drive.
- After the Mac finishes partitioning the hard drive, it will automatically boot into the Windows installation disc or USB.

