**Atmel Studio 7 Installation and Modification**

We will be using in EGR 270 to teach assembly language programming for the Atmega328P (microcontroller on the Arduino UNO).

This free software can be downloaded from:

<http://www.atmel.com/tools/atmelstudio.aspx#download>

**Modifications to Atmel Studio 7 installed in EGR labs:**

* Launch Atmel Studio 7
* Select the following menus: ***Tools – External Tools***
	+ If External Tools does not appear under ***Tools*** menu go to ***Tools – Select Profile*** and change to ***Advanced.***

The External Tools window will open (see next page). Enter the following information:

1. In **title**: Send to Arduino
2. In **command**: Enter the following exactly: – you may want to cut and paste this:

C:\Program Files (x86)\Arduino\hardware\tools\avr\bin\avrdude.exe

1. In **arguments**: Enter the following exactly (including quotes) – you may want to cut and paste this:

-C "C:\Program Files (x86)\Arduino\hardware\tools\avr\etc\avrdude.conf" -p atmega328p -c arduino -P COM4 -b 57600 -U flash:w:"$(ProjectDir)Debug\$(TargetName).hex":i

1. Check "**Use output window**" box.
2. Click **OK**.
* When you are done, you will see the new option "Send to Arduino" in the **Tools** menu.

***Note***: The instructions pasted in the Arguments section used COM4. This may need to be changed to a different COM port depending on what COM port the computer assigns to the Arduino Nano when you connect it to the computer with a USB cable.



(Same window shown again, but scrolled to the end of the text in each box):



**What does the External Tool do?**

* Uses the following program to download your program: ***avrdude.exe***
* Downloads the hex file to flash memory for your project: ***-U flash:w:"$(ProjectDir)Debug\$(TargetName).hex":i***
* Sets the baud rate to 57600 bits/s: ***-b 57600***
* Sets the COM port: ***-P COM4***
* Specifies the microcontroller: ***-p atmega328p -c arduino***