OBJECTIVES

- Install the *Atmel Studio* software program.
- Learn how to create, simulate, and emulate a project with *Atmel Studio* in the context of an *ATxmega128A1U* microcontroller.

HOMEWORK STRUCTURE

In this homework, you will begin to use the *Atmel ATxmega128A1U*, a microcontroller within the Atmel AVR® family, along with *Atmel Studio*, an **I**ntegrated **D**evelopment **P**latform (**IDP**) for developing and debugging applications on Atmel-related devices.

REQUIRED MATERIALS

- *Microchip Studio 7.0 (formerly called Atmel Studio) Installation Tutorial*
- *Create, Simulate, Debug, and Run a Project in Microchip Studio*
- *µPAD v2.0* with USB A/B cable

SUPPLEMENTAL MATERIALS

- *Video Tutorial - Atmel Studio Download and Installation*
- *Video Tutorial - Atmel Studio: Creating an Assembly Project*

HOMEWORK PROCEDURE

For homework submissions, use the template provided on the course website.

1. *ATMEL STUDIO* INSTALLATION

In this section, you will follow the *Microchip Studio 7.0 (formerly called Atmel Studio) Installation Tutorial* in order to download and install *Microchip/Atmel Studio*.

1.1. Download and install *Atmel Studio* by following the aforementioned guide.

2. LEARNING HOW TO USE *ATMEL STUDIO*

In this part, you will go through the *Create, Simulate, Debug, and Run a Project in Microchip Studio* tutorial found on the website, and take screen shots with your computer of the results of certain pertinent steps. To take a screen shot in the Windows operating system, press Ctrl-PrtScrn on your keyboard, i.e., select Ctrl and PrtScrn at the same time. **(**The built-in *Snipping Tool* program in Windows is another great feature to print your screen.)

2.1. Obtain a screen shot from your computer of the results of step 9 (the simulation), also including the assembly language program, the *Processor Status* window, and your name in big letters on the same screen.

2.2. If you do not yet have your lab kit, just state this here. If you do have it, obtain a screen shot from your computer of the results of repeating step 9 (step 3 in § **Running the Program in Hardware)** but for this time using the actual device (EDBG). Again includ the assembly language program, the *Processor Status* window, and your name in big letters on the same screen.

HOMEWORK PROCEDURE SUMMARY

1) Install *Microchip/Atmel Studio* in §1.
2) Follow the *Create, Simulate, Debug, and Run a Project in Microchip Studio* tutorial, and take the necessary screenshots as described in § 2.