Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EEE 202 Lab 4: Arduino**

**\*\*\* IMPORTANT NOTE REGARDING THE ARDUINO BOARDS\*\*\***

Never connect the USB cable to a computer and a battery or power supply to the board at the same time or you risk sending a charge in through the USB port and damaging the computer. Always keep any power supplies separate and distinct from the 5V or 3V pin of the Arduino\*\*\*

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| --- |
| **Data Sheet** |
| **Part 1: SOS Code** |
| **Put Arduino SOS code here:** |
| **Part 2: Digital Input with Switch** |
| **What did you observe with your physical circuit when you toggle the slide switch (when running the code on Page 12)?** |
| **What did you observe when monitoring the Serial port (when running the code on Page 13)?**  **Provide a screenshot of your Serial Port window here (Have a look at an example screenshot at the end of this document):** |
| **Update the code on page 13 to do the following:**   * **Add a variable to also determine the “off time”** * **Send the “off time" output to the Serial Monitor to print with the “on time”**   **Record your entire updated Arduino Code here:**  **Provide a screenshot of your Serial Port window here (Have a look at an example screenshot at the end of this document):** |
| **Part 3: Writing to the LCD Display**  **Note: if your LCD is not working, use the Serial Port instead for this (and the following) parts.** |
| **What did you observe when you run the LCD code that was provided (What are the display results)?**  **Provide a picture of your circuit while the LCD is displaying the message here (Have a look at an example photo at the end of this document):**  **What happens when you adjust the potentiometer? Mention any other observations you find, if any.** |
| **Modify the code on page 15 to do the following:**   * **The LCD display initializes with:**   **Welcome to**  **EEE 202**   * **Set a variable for the time the system has been running (like you did in part two with the “now” variable) and then display:**   **Run time (*run time in milliseconds*)**  **Record your entire updated Arduino Code here:**  **Provide a picture of your circuit while the LCD is displaying the message here (Have a look at an example photo at the end of this document):** |
| **Part 4: Analog Inputs with Light Sensors and LCD Display** |
| **What did you observe in the Serial Monitor when you ran the photoresistor light sensor code?**  **Provide a screenshot of your Serial Port window here (Have a look at an example screenshot at the end of this document):**  **What value is the analog pin 0 reading when the photoresistor is covered (dark)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **What value is the analog pin 0 reading when the photoresistor is uncovered (exposed to light)? \_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Write code to send the message “Day Time” when the photoresistor is exposed to light and “Nighttime” when the photoresistor is covered.**  **Record your updated Arduino Code here:**  **Provide a picture of your circuit while the LCD is displaying the message here (Have a look at an example photo at the end of this document):** |
| *Note: Maintaining a clean and organized lab space is a skill you are also expected to learn. Failure to clean up your space or put components where they belong could result in a 20% penalty at the discretion of the Lab TA*  **Serial Monitor Screenshot Example. Note your name, date and time, and readable COM4 output – screenshots might vary based on the operating system you are using). If your name is electronically typed, then it must be typed on the code WITHOUT any “text background”. The code must show up in the background of your name.**    **Hardware Image Example. Note your name:**   1. **on a piece of paper; OR** 2. **typed electronically (must be typed on the breadboard WITHOUT any “text background”. Breadboard must show up in the background of your name.)** |