Summary:

Students will use the MegaSat board to demonstrate synchronous serial communication between the micro-controller and peripheral IC's via the I2C bus.

Materials:

Each student should have the following materials, equipment, and supplies:

- Computer with Arduino IDE installed
- USB-AB programming cable
- Arduino Mega microcontroller
- Assembled MegaSat board

Procedure:

1. Open Arduino IDE and write a program using the fallowing guidelines:
    - Have the Arduino display the readout from the gyro-accelerometer on the Serial Monitor
    - It must use the Wire Library *(this is the designated library for I2C communication)*.
2. Once the code complies, connect the Arduino to the MegaSat and the Arduino to your computer.
3. Upload the code to the Arduino and test run the program.
4. Pickup & move the MegaSat around **gently**. Observe the Serial Monitor to see if the gyro-accel. sensor is reading properly.

Expected Outcomes:

Each team should complete the activity with the knowledge and skills to connect & control a device with the Arduino Mega microcontroller using serial communication via the I2C bus.