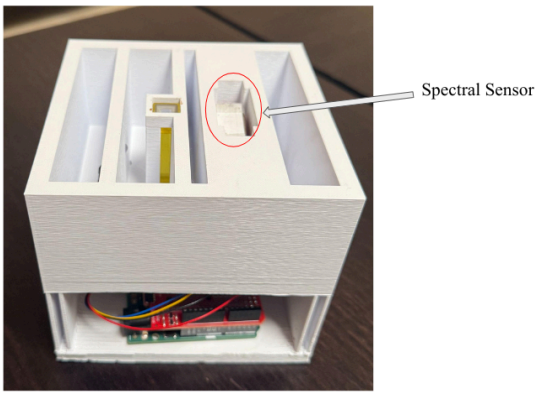
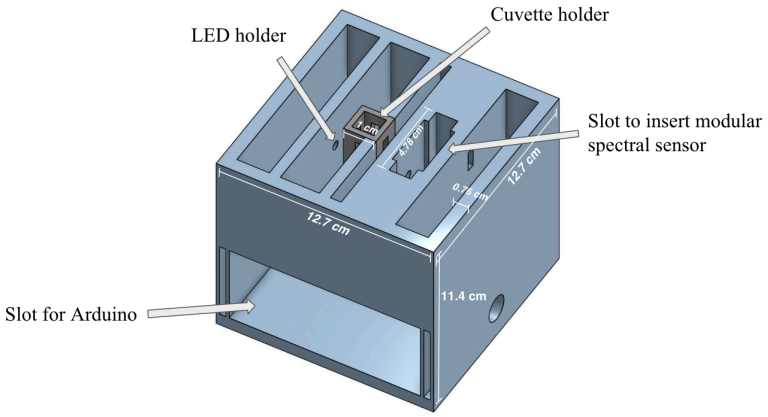
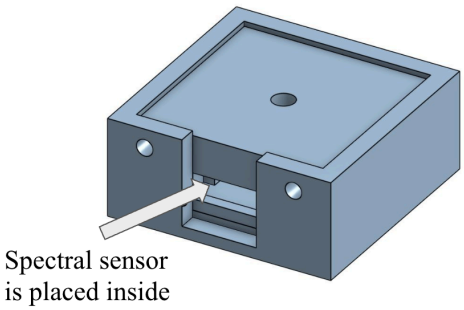
**Instruction Manual for Assembly:**
https://github.com/anukha-v/Spectroscopy-Educational-Kit.git




1. Attach a Qwiic shield (board that incorporates the Qwiic Connect System with Arduino) to an Arduino microcontroller
    a. Install the headers according to manufacturer's instructions using soldering (if needed)
    b. Attach Qwiic shield to Arduino by inserting all the pins into their respective slots on the Arduino
2. 3D-print the Spectrometer Housing (SpectrometerHousing.stl).
    a. Include supports on build plate
    b. Use an infill of 15%
3. 3D-print the two pieces of the spectral sensor casing (SensorHolderOuter.stl and SensorHolderInner.stl)
4. Assemble modular sensor block
    a. Attach a Qwicc connector wire to the spectral sensor's Qwicc connector slot
    b. Place the spectral sensor into the inner part (SensorHolderInner.stl), where it should fit snugly
    c. Place the inner casing with the sensor into the outer shell (SensorHolderOuter)
    d. Screw in place with Phillips sheet metal screws #4 (0.112" diameter)
    e. Guide the wire from the modular sensor unit through the hole on the upper layer of the housing into the bottom compartment of the casing. Connect the other end to the Qwiic connector slot on the Qwiic shield (attached to Arduino).
    f. Place the modular sensor unit into the designated slot in the spectrometer housing, it should fit snugly.

The modular sensor block should look like this:




5. Place the Arduino (with Qwiic shield attached) into the Arduino slot.
6. Plug in the Arduino to the computer's USB port, and run code on the Arduino IDE.
7. Use a standard 1cm cuvette (12.5 mm width x 12.5 mm depth x 45 mm height) and fill it with the sample to be analyzed. Place the cuvette in the cuvette holder.
8. Cover the spectrometer housing with a lid to ensure stray light is blocked during data collection.