The Spectator Instrumentation Platform

Build Instruction Manual

Build Materials

- 2” x 4” board
- 2’ x 1’ x ¾” Plywood board
- 10” shelf bracket
- 1.5” L bracket
- Velcro (Industrial Strength Recommended)
- Wood Screws (Steel 10 x 1)
- Nylon Clamps (5/8”)
- 5 Rubber bands
- 2 x Utility pull handle
- Matte Black Paint

Required Tools

- Circular (Skill) Saw
- Power Drill
- Hole-saw bit
- Screw Driver
- Dremel w/ sanding bit (Optional)
- Safety goggles

Instrumentation and Sensors

- GPS (Manufacturer: Garmin)
- USB Webcam (Manufacturer: Creative Labs)
- Lab Spectrometer (Manufacturer: Ocean Optics)
- 11 inch Netbook with Windows 7 (32-bit) and minimum three (3) usb ports (Manufacturer: Asus)

Software

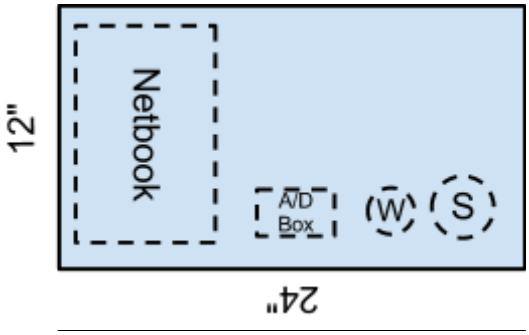
- Google Earth (GPS)
- Spectra Suite (Spectrometer)
- Fwink (Webcam)
- KMLtoCSV Converter

Construction Instructions

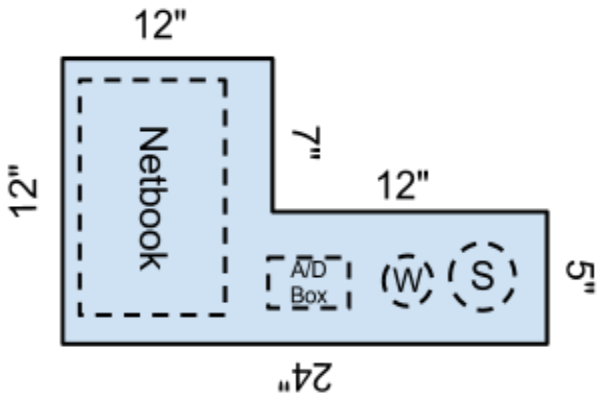
1. Gather all materials and put on the safety goggles.

2. Cut the 2” x 4” board to a length that is comfortable for you using your circular saw and paint the board black (~6’ suggested).

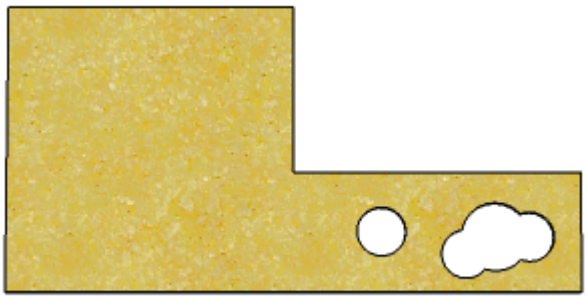
3. Lay out all of your equipment onto 2’ x 1’ x ¾” plywood in order to decide where to make holes in the wood to mount your equipment



4. Mark the 2’ x 1’ x ¾” plywood according to the size, amount, and arrangement of equipment and cut it to size with the circular saw.

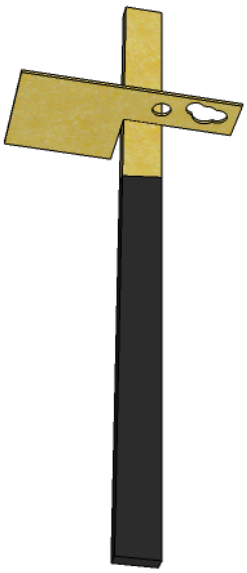


5. Using a hole saw make circular holes into the 2’ x 1’ x ¾” plywood in order to mount your spectrometer, and webcam.



6. In order to protect your lab equipment use a Dremel w/ sanding bit (Optional) to smooth out any rough edges the Hole-saw bit left behind.

7. Determine a comfortable height at which you could attach the 2’ x 1’ x ¾” plywood board to the 2” x 4” board that will allow you to operate your equipment comfortably in the field. (Suggested 16 ½” from the top of the 2 x 4)



9. Using a 10” shelf bracket and an 2” L bracket attach the to the 2’ x 1’ x ¾” Plywood board to the 2” x 4” board securing it with wood nails.

10. Determine a comfortable height at which you can hold the 2’ x 1’ x ¾” Plywood board in place while in the field and attach the handles onto the 2” x 4” board securing it with wood screws.

Sensor and Equipment Mounting

1. In order to protect your lab equipment in the field secure the laptop to the “Spectator” using Velcro. Place Velcro strips onto the second piece of wood vertically.
2. Place Velcro onto the bottom of your laptop horizontally.
3. Place small Velcro strips on the edges of the webcam circular hole
4. Place Velcro on the edges of your webcam
5. Secure your Lab Spectrometer (Manufacturer: Ocean Optics) by placing it into the hole drilled by your Hole-saw bit and secure it using rubber bands
6. The fiber to usb connection Spectrometer box must also be secured using rubber bands.
7. For cable management, screw plastic hooks to the appropriate sides of the Spectator.
8. Feed the cords from the webcam and Spectrometer through the hooks to keep them protected and secure while in the field.