

Round 1 Obstacle Course Maneuvering and Scoring

An underwater remotely operated vehicle (ROV) must be able to maneuver successfully under its own power. If a vehicle cannot maneuver to the appropriate location to perform its task, the vehicle is of no use. The course consists of a submerged obstacle course, oriented in any direction through which the vehicles must travel. The 2017 challenge involves the use of light sensors. A light sensor will be positioned at the furthest end of the course and at the beginning of the course as shown in Figure 1.

Consideration of optimal maneuverability, control, and speed should be given when constructing your Sea Perch (thruster placement and orientation, tether attachment, buoyancy and ballast, etc.) and control box. The submerged obstacle course shown in Figure 1 shows the five (5) large rings (22" – 24" minimum diameter), oriented in various directions, and the placement of two (2) light sensors.

1. The ROV enters the obstacle course and maneuvers the vehicle to the end of the course where the first light sensor to be triggered is located.
2. The ROV then must trigger the first light sensor before starting its return run.
3. The ROV must return through the course in reverse order to return to the start and then trigger the second light sensor before returning to the surface.
4. Scores for this round will be based on the fastest time for successfully navigating the obstacle course and triggering both light sensors.
5. You will be given a total of no more than **10 minutes** to complete the round.
6. The vehicle cannot be dragged through the obstacle course via the tether.
7. The judge's stopwatch will begin when the whistle blows and stops when your team makes it back through the first hoop, triggers the sensor and surfaces on the end where you started.

For every hoop your team makes it through you will receive points. A time penalty will be enforced if a light sensor is skipped. If your team is not able to make it through a hoop you may skip it.

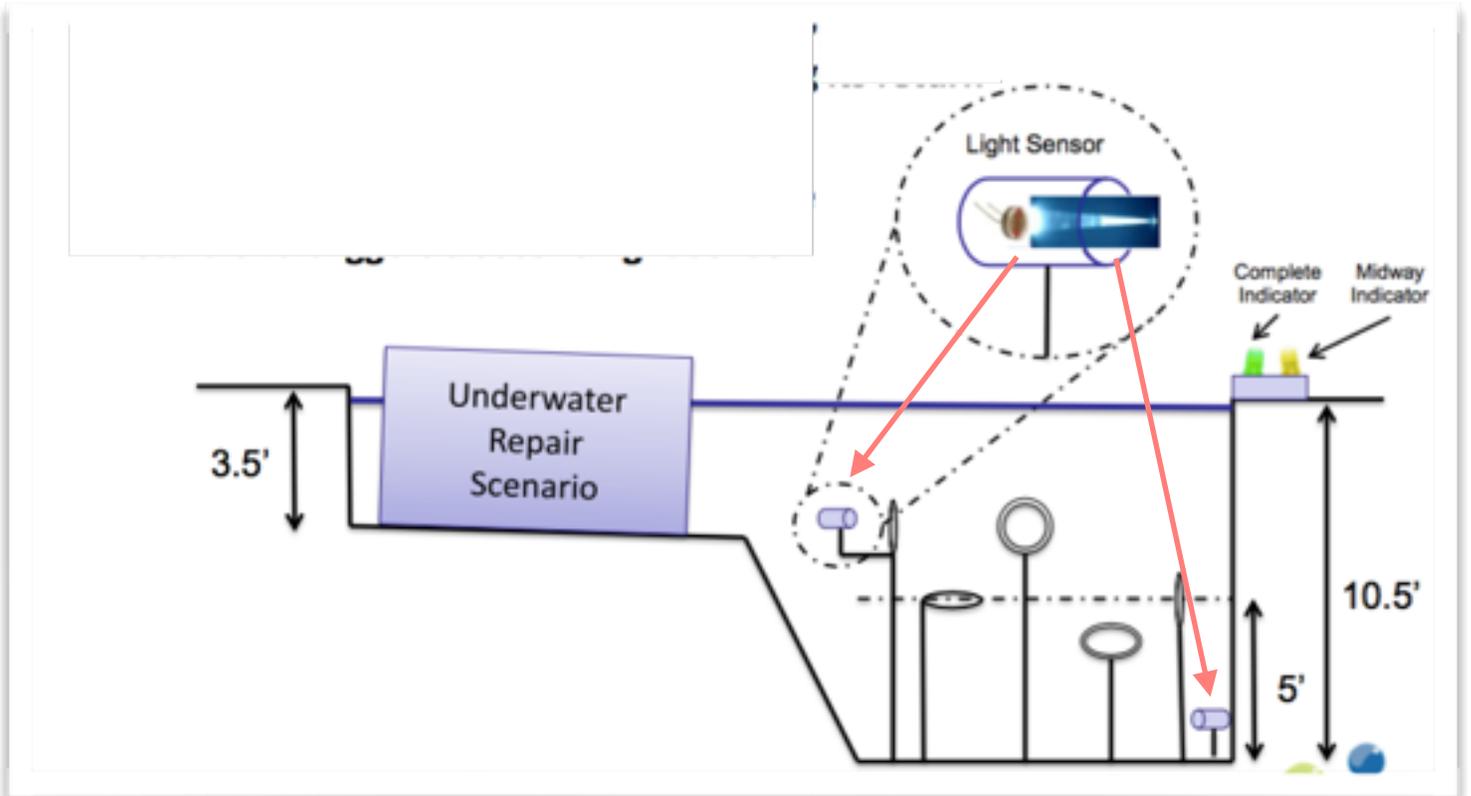


Figure 1: View of Obstacle Course Assembly and Layout