



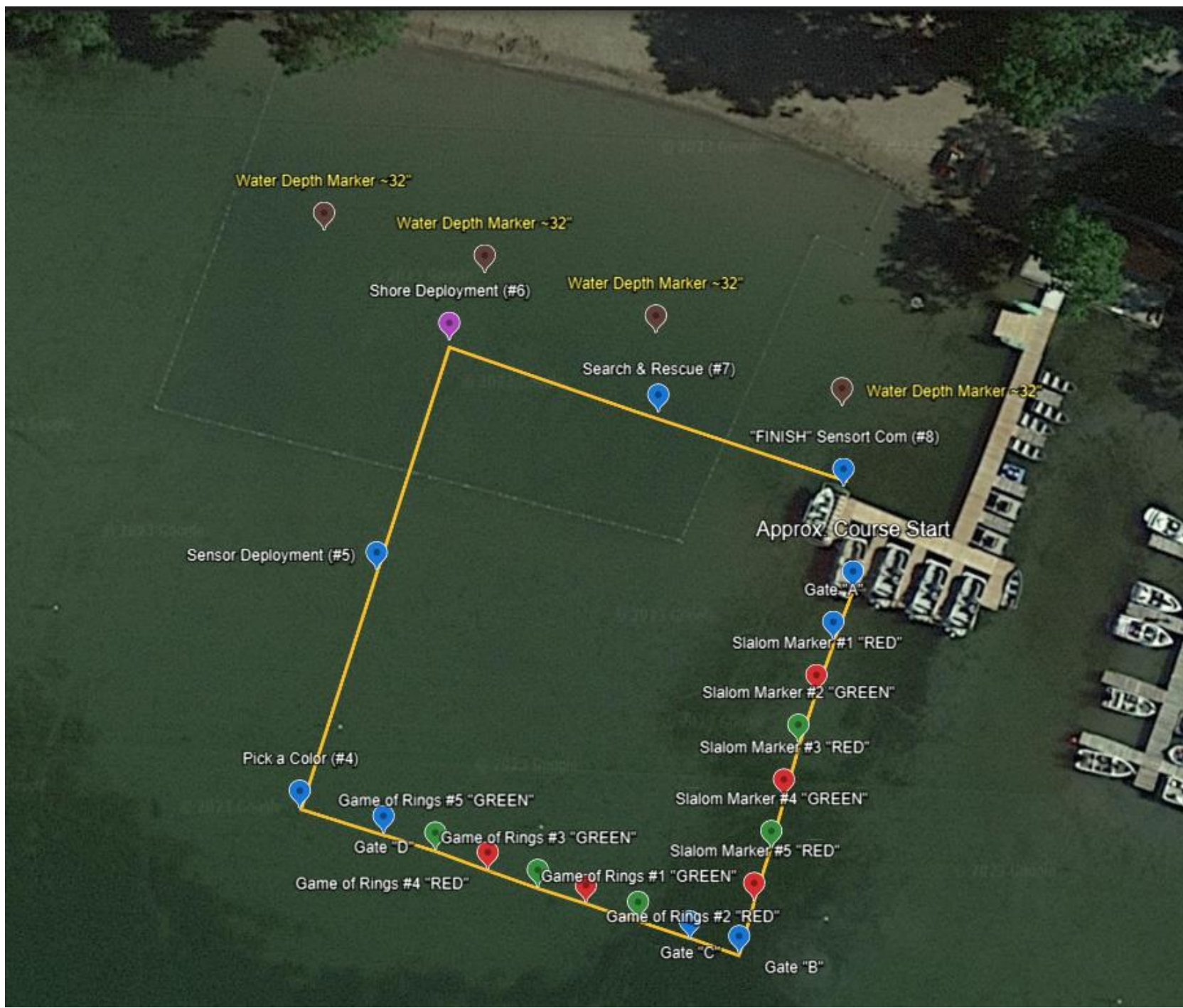
Course Challenge Details





Course Map

Google Earth Map
https://earth.google.com/earth/d/1z5f1F2V_VePx-4tFEP3nh6K9qi97GzGy?usp=sharing





A team's score will be totaled for the BEST COMBINED SCORE for all challenges completed within the allotted time.

1 hour will be provided to each team to attempt to complete as many challenges as possible. Team's will not be penalized for prior team's delaying the beginning of their attempted challenge run. Judges will have the determination of "stopping the clock" during a run that will not penalize a team.

Teams are permitted to return to the dock to modify their device or code during the competition run for no penalty.

Completion of Challenge #1 is required to record a score to competition

If 20 minutes is attempted to complete a Challenge #1 without success, teams are permitted to continue to other tasks for an exhibition run. This exhibition run will not result in a competition score but allow teams to attempt the other challenges.

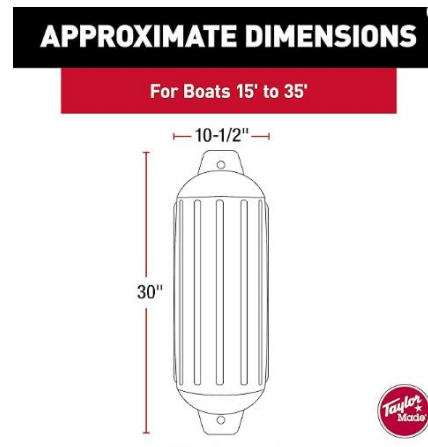
Any remote-control intervention to complete challenge tasks will result in a deduction of points.

Buoy Markers

*Color Defined by Challenge



Taylor Made Products Super Gard Inflatable Vinyl Boat Fender

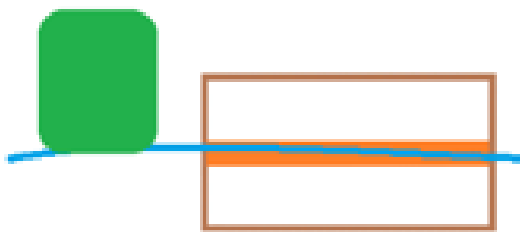


https://www.amazon.com/Inflatable-Double-Molded-Football-Inflation-Atlantic/dp/B000MJMQ74/ref=sr_1_25?crid=1GXGSM4SDCGK7&keywords=taylormade%2Bboat%2Bbumpers&qid=1698668009&srefix=taylormade%2Bboat%2Bbumper%2Caps%2C84&sr=8-25&th=1&psc=1

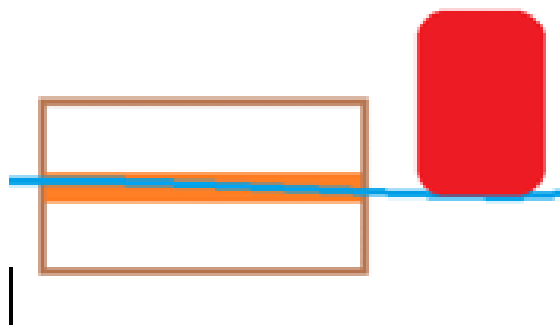


Basic BUOY Navigation Rules:

GREEN BUOYS should be navigated to on the RIGHT side of the buoy.



RED BUOYS should be navigated to on the LEFT side of the buoy.

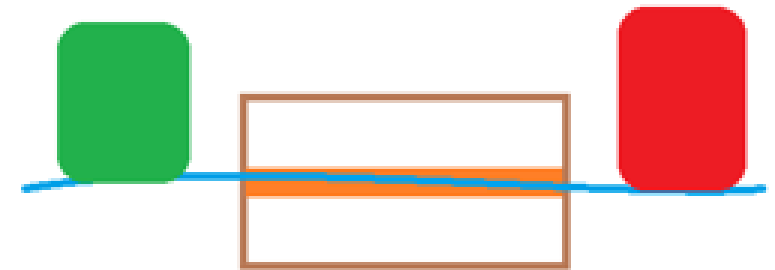


CHALLENGE #1 Gate Navigation



- a) Successfully leave the dock untethered
- b) Navigate a 2-buoy gate
- c) Points will be awarded for navigating successfully through the gate.

- a) Partial points for any portion of the boat entering the gate
- b) Full points for the entire LPV passing through gate
- c) Additional points awarded for zero contact with either buoy



Lime Green



Red

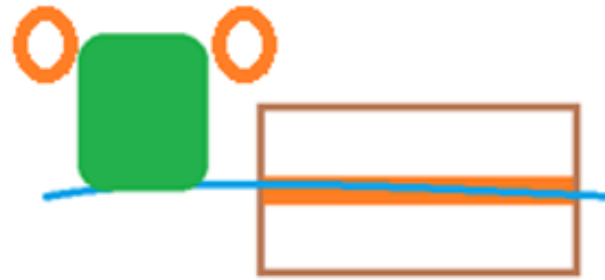


CHALLENGE #3 Game of Rings Race



- a. Collect Rings along a specific path.
- b. Navigate the Game of Rings Course, by following Buoy Navigation Rules
- c. Rings will be placed on both sides of the colored buoys.
- d. Points will be awarded for each ring collected in a single pass.
 - i. Correct Rings per the Buoy Navigation Rules will be worth 10 points.
 - ii. Incorrect Rings per the Buoy Navigation Rules will be worth 5 points.

GREEN Buoys = RIGHT Ring



RED Buoys = LEFT Ring



- e. Ring Points will ONLY be scored on a single directional pass of the buoys.
- f. Time Bonus will ONLY be scoreable for LPV's that collect 5 rings.
 - i. Bonus points will be awarded for "fastest" Game of Rings time recorded versus all teams.
 - ii. Slalom time will begin after entering Gate "C".
 - iii. Slalom time will end after crossing the plan of Gate "D".

CHALLENGE #3 Game of Rings Race



Lime Green



Red



Markers for Game of Rings will be stabilized with “Sand Anchor” to prevent rotation.

Something similar to:

https://www.amazon.com/SturdyShape-Stainless-Protection-Suitable-Pontoon/dp/B0C3B5XGN1/ref=sr_1_1_ssp_a?keywords=boat+sand+anchor&qid=1698680847&sr=8-1-spons&sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&psc=1

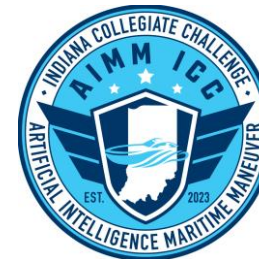
- PLA 3D Printed Ring
 - Red Rings on Red Marker
 - Green Rings on Green Marker
- 5.75” OD
- 3/8” Cross-section Width



CHALLENGE #4 Pick a Color



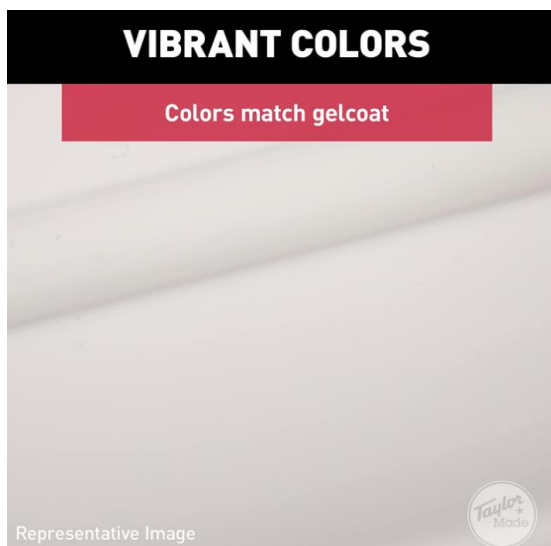
- Navigate to a specific-colored buoy
- Contact the buoy with the LPV to receive points
- Teams can define the colored buoy that their LPV will seek & contact
- Additional points can be earned by having judge randomly select the color for the team

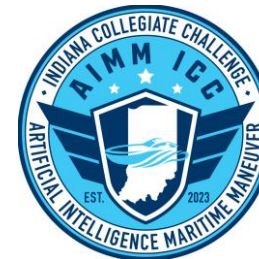


CHALLENGE #5 Sensor Deployment



- a) Teams will be able to define a deployable sensor
- b) Navigate to the “Zebra” buoy
 - a) 2” wide black electrical tape will be “spiral” wound around the white buoy
- c) Deploy the sensor
 - a) Sensor must not be tethered to the LPV
 - b) Sensor must float or be above water
- d) Sensor upon initial deployment must be within 6’ radius of Zebra Buoy
- e) Sensor must be able to be safely retrieved after scoring





CHALLENGE #6 Shore Deployment



- a) Navigate to the Black Buoy which signifies the recommended shore deployment area
- b) Deploy a student designed object from the LPV in this Black Buoy area that is left on the beach within the defined area
- c) To receive full points the object must remain on the beach under its own capability after deployment
- d) For safety purposes, devices can not be an uncontrolled aerial device, for example “uncontrolled projectiles”. Guided drones are allowed



CHALLENGE #7 Search & Rescue



Rescue Billy 6 to 9 Month Old - Infant Water Rescue Manikin

https://www.amazon.com/Rescue-Billy-Month-Old-Manikin/dp/B002TECK7G/ref=sr_1_1?crid=OQF17DPPKQYM&keywords=rescue+manikin+billy&qid=1695756643&s=sporting-goods&sprefix=rescue+manikin+billy%2Csporting%2C70&sr=1-1&ufe=app_do%3Aamzn1.fos.ac2169a1-b668-44b9-8bd0-5ec63b24bcb5

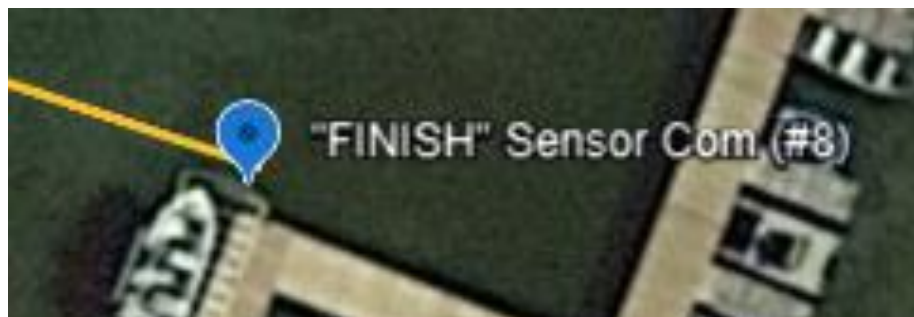
- a. Find & Retrieve a floating infant
- b. Scoring
 1. Retrieve the object and the object stays in the water will have "Value 1"
 2. Full removal of the object from the water will have "Value 2"
 3. Any damage to the object will result in decreased points
 4. Retrieval process must be deemed safe for retrieving a human



An APPROVED infant life preserver will be on "Rescue Billy" to allow the manikin to float upright



CHALLENGE #8 Sensor Communication



From Dock

- a. Communicate wirelessly with the Deployed Sensor from Task #5
- b. Validate the data to receive additional points



Total Time Bonus:

If a team completes a minimum of 4 tasks, they will be eligible for the fastest course points bonus. The team's time will be divided by the number of tasks completed to create an average "per-task" time. The team with the smallest per-task time average will be awarded a bonus, the other total time bonus eligible teams will be ranked for this time and point value will be awarded.