

Autonomous Maze (Aircraft Security Robot): GPI, TI, API

DESCRIPTION: Autonomous programming of the robot.

Rules

1. Participants will have up to 5 minutes to complete the course.
2. Participants may modify the robot to assist in completion of tasks.
3. Participants will be given the exact dimensions of the course and the tasks prior to the event so that it can be programmed to complete the tasks.
4. The robot will begin at the starting line and work its way around the course.
5. Participants will be allowed to restart the course as many times as they can during the allotted time. The best score and time will be used for final scoring and ranking.
6. In case of a tie the team that completes the course in the shortest amount of time will be the winner.

Alternative

1. Once the robot begins a course, it should not be touched.
If the participant chooses to move the bot for slight course modification the student must inform the judge of the movement and the judge will make the adjustment, the following penalties will be enforced. All wheels must remain in contact with the ground. (Judges discretion)
Slight course modifications: 1st 20 sec. penalty, 2nd 30 sec. penalty, 3rd 40 sec. penalty
4th - start over.
2. Participants will be allowed to reprogram the robot during the competition within the 5 minute limit and start the course over. Once the five minutes have expired, the best score will be counted.
3. Participants will have the opportunity to complete the course a second time after all teams have had an opportunity to complete the course. (if time permits based on how many teams sign up)

Scoring

Teams will get points for completing various tasks along the way. Order of operation does not matter.

Task 1: Through/Under the Bridge = 10 points

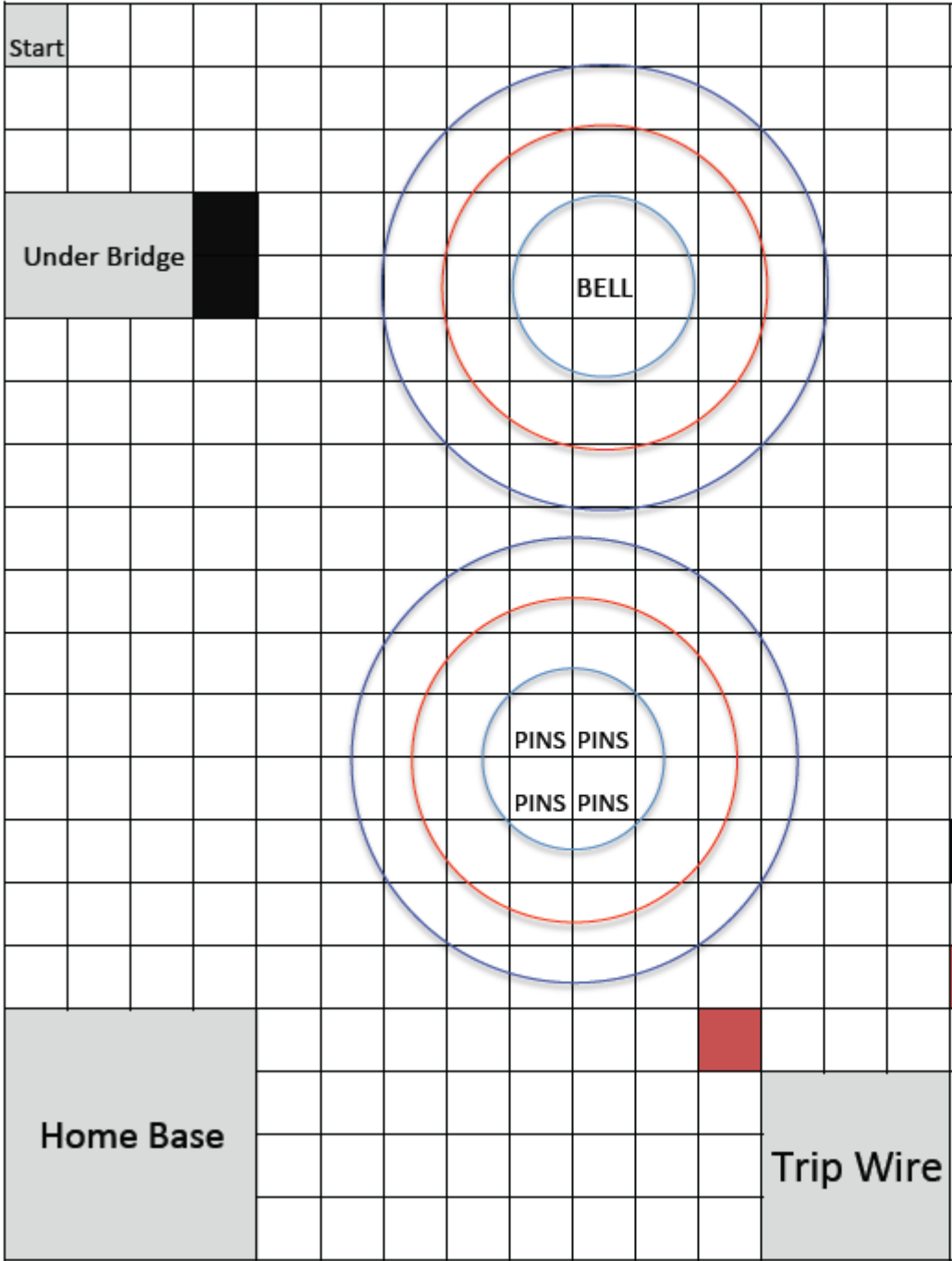
Task 2: Ring the Bell = 10, 8, 5 points (outside circle 5pts)

Task 3: Trip the Sensor = 10 points.

Task 4: Touch a pin = 10, 8, 5 points (outside circle 5pts)

Task 5: Get to Home base by crossing the plane with one wheel = 10 points

Total points possible: 50 points (Split time counted upon entering each task.)



- Task 1: Tunnel
- Task 2: Ring the Bell
- Task 3: Knockdown
- Task 4: Tripwire

- Tire
- Challenges/Start/Home
- Hook

Grid parameters: 1ft. x 1ft.