



Boat Racing

GUIDELINES

BAKU 2023

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1. Introduction

- 1.1. The Boat Racing competition encourages young people and technology enthusiasts to learn, use, experiment with STEAM (Science, Technology, Engineering, Arts, and Mathematics) skills, conduct experiments with artificial intelligence, explore the principles of future technology, and develop engineering expertise and independent thinking.
- 1.2. The primary goal of applying this technology in the field of shipping is to protect natural reserves and ensure the country's security. As a significant part of recent academic and industrial research, the focus is on the use of unmanned transportation vehicles, which can reduce costs and risks, thereby promoting the study of autonomous transportation means in performing surface operations.
- 1.3. In response to this need, the aim of the competition is to provide teams with tasks related to scenarios, testing how they will fulfill them. This initiative aims to promote the wider adoption of remotely operated or autonomously performing transportation vehicles within the country, thus playing a pioneering role in the development of this field.

2. Participation Conditions

- 2.1. Teams must consist of participants aged 18 and above, with 1 team leader and 3 students between the ages of 13 and 16. Each team member can only join one team, and a team leader can lead a maximum of 1 team.
- 2.2. If a participant has previously participated in another competition with the same project, all details of their participation in that project (date, location, organizer, result) must be provided to the organizers.
- 2.3. Each team can apply to only one competition. Applications from the same team or individuals applying to different categories of SAF-2023 will be considered invalid.
- 2.4. Participants must adhere to all rules. In the event of a first rule violation, the judge will impose a 10-second penalty, and if this violation is repeated several times, the judge can deduct 10 points from the team or disqualify the team.
- 2.5. Participating teams must arrive at the competition venue at least 5 minutes before the start of the races. If, within 5 minutes after the start of the races, three players of the opposing team are absent due to delays or other reasons, the judge will determine that the non-participating team has forfeited the race, and the overall score for that stage will be 0.
- 2.6. If both teams are unable to arrive at the designated time due to delays or other reasons, both teams will be considered to have forfeited the race.

2.7. Participating teams must respect the spirit of competition, refrain from arguing or insulting others, avoid physical confrontations or provocations, and not cause harm to other teams' boats. Penalties for rule violations should be proportional to the severity of misconduct within the arena.

2.8. Participating teams should be aware of safety and should not engage in behavior that threatens the safety of their own team and other personnel. Additionally, the unauthorized use of electrical hazards, open flames, and the bringing of dangerous items into the competition area are prohibited.

2.9. During the race, team coaches and team supporters are not allowed to enter the competition field or interfere with the game in any way. If a team's coach or supporter is leading the team and interfering with the games of other teams, the judge has the right to issue warnings, disqualify the team, and impose other penalties.

2.10. Each participant is restricted to competing in one category. Actions such as repeating the competition, fake registration, altering the age of the competition participant, and unauthorized changes to competition participants are strictly prohibited. Upon discovery and confirmation, the participant will be disqualified.

2.11. Participating teams are considered to have accepted all the conditions mentioned in this regulation.

2.12. Participating teams are considered to have accepted all changes made by the SAF-2023 Scientific Committee and all conditions specified in the rules.

2.13. In cases of force majeure not covered in the rules, decisions will be made by the coordinators.

3. Special Cases

- 3.1. The main reasons for special circumstances are interruptions due to the organizing team, control over the venue, the racecourse, or force majeure reasons. After inspections and discussions, the head judge can decide whether to hold a rescheduled match.
- 3.2. No new attempts will be made for race interruptions or stoppages due to errors in any vessel's operation or insufficient battery energy (including equipment malfunction or communication breakdown, but not limited to these) during the race.
- 3.3. Participants unable to compete at the venue where the race is taking place due to their personal reasons or force majeure circumstances should inform the competition organizing committee in advance.

4. Application Procedure

Applications will be accepted through the official SAF website (<https://saf.steam.edu.az/>).

5. Selection Stage

5.1. After the registration deadline, a selection round will be conducted among the teams, and the teams that advance to the final will be determined. The conditions and timing of the selection stage will be announced after registration.

5.2. General Information. The selection in this competition consists of 2 stages:

5.2.1. In the first stage, participants, after registering, prepare an initial evaluation report about the ship project they want to create. The report includes:

- Presentation
- Title page
- Information about the team
- Information about the project
- Electronics and circuitry to be used
- Project schematic
- 3D model of the project
- Explanation of the code's logic
- Whether it is wired or wireless

5.2.2. Support will be provided to participants who advance to the second stage. Within a specified time, the ship must be prepared, and a video demonstrating the ship's watertightness, agility, and movement in water must be submitted (the video should be uploaded to the "YouTube" platform, with a maximum duration of 1 minute and a minimum quality of 720p)

5.3. Note 1: The price list of any additional electronic elements used in the support stage should be submitted in the second stage and should not exceed 200 AZN. (The receipt or invoice of each purchased element should be submitted together with the price list).

5.4. Note 2: Organizers may invite teams to an interview stage as needed. In this stage, the team's work and level of knowledge will be evaluated. Each detail of the ship must be prepared by the team themselves.

6. Selection Criteria

6.1. Evaluation will be conducted by 3 judges. If there are inaccuracies in measurement and weight during the evaluation, the points collected from measurement and weight will be deducted accordingly.

6.2. Evaluation criteria for the selection stage:

Criterion	Point
The report for Stage I	30
The report for Stage II	50
Self-sufficiency	45
Preparation of Pearls	15
Preparation of the case	15
Preparation of the remote controller	15
Assembling the ship's electronics system from scratch	15
Originality	60
General	245

7. Final Stage

- 7.1. According to the rules given in the ship competition, the teams will prepare and exhibit ships and the ships will be competed. The main part of the ship competition is that the participants control their ships with a controller and pass certain obstacles in a short period of time and perform tasks.
- 7.2. Teams should also make a poster to show their work process. Requirements for the poster:
- 7.3. The dimensions of the poster you will make should be 90-125 cm. The poster should cover the given topic.
- 7.4. The competition consists of 1 stage. At this stage, the team will compete along a defined route in an obstacle course:

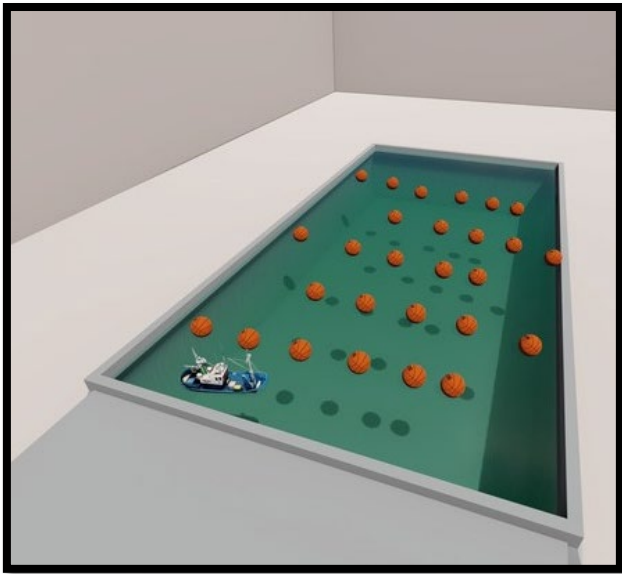


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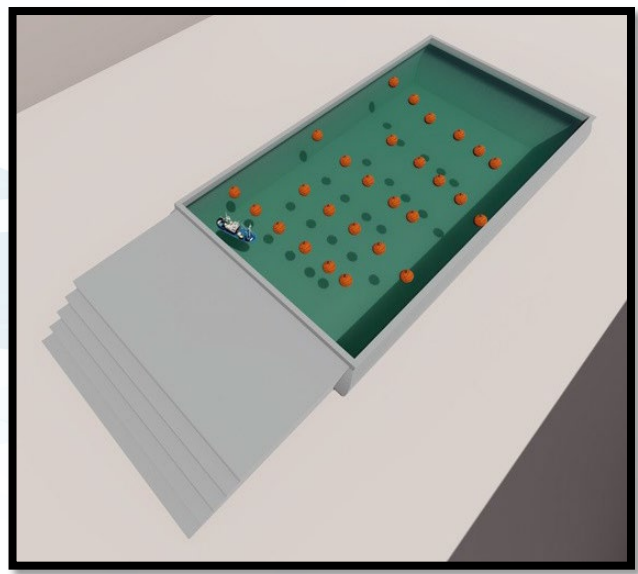


image 2

- 7.5. **Preparation.** Teams will be given 5 minutes at each stage to familiarize themselves with the competition area and test the ship.
- 7.6. **Dimensions of the ship for the final stage:** (width, length, height will be the longest dimension)

Criterion	Point
Vessel ≤ 50 cm	40
50cm < Vessel ≤ 60 cm	20
60cm < Vessel ≤ 75 cm	10
75cm < Vessel < 60cm (will not be allowed to race)	0
General	70

- 7.7. **The mass of the ship for the Final phase of the ship:**

Criterion	Point
Ship weight ≤ 8 kg	40
8 kg < Ship weight ≤ 10 kg	20
10 kg < Ship weight ≤ 12 kg	10
12 kg < Ship weight	0
General	70

8. Competition

- 8.1. During the race stage, teams will compete within Area A (for 3 minutes). Participants are free to move within the designated movement zone around the race area and choose suitable positions to maneuver their ships.
- 8.2. In the race stage, competing teams must navigate through obstacles following the designated trajectory. Teams will start the race with the "Start" signal and will race for 3 minutes. The team that reaches the finish zone first will be the winner.
- 8.3. Timing for teams will begin with the "Start" signal, and the race will be halted the moment any of the ships enter the finish zone. If a team stops their ship outside the finish zone, the time will not be stopped. If ships collide with an obstacle or stop for any reason during the race, the participant can restart their ship from the point indicated by the judge (a designated point behind where the ship stopped). If a ship touches an obstacle while passing through it, the participant must restart the ship from the point indicated by the judge, and in this case, passing the underwater obstacle will not be counted.
- 8.4. If a ship touches an obstacle but does not fall to the ground and continues moving, this will not be considered a rule violation.
- 8.5. Ships must pass the obstacles in the designated trajectory in sequence. Otherwise, the ship will be returned, and the participant can restart the ship from the point indicated by the judge (a designated point behind where the ship deviated from the trajectory)..
- 8.6. Participants can also stop the race at any place and time before the time expires. In this case, the team that is furthest ahead will be declared the winner.
- 8.7. If teams reach the finish line simultaneously, the race will be conducted again.
- 8.8. After the race is completed, participants must sign a document containing the results prepared by the judges.
- 8.9. The width of the race area is 4.88 meters, and the length is 9.56 meters. The depth of the race area is 1.32 meters.

9. Competition Area

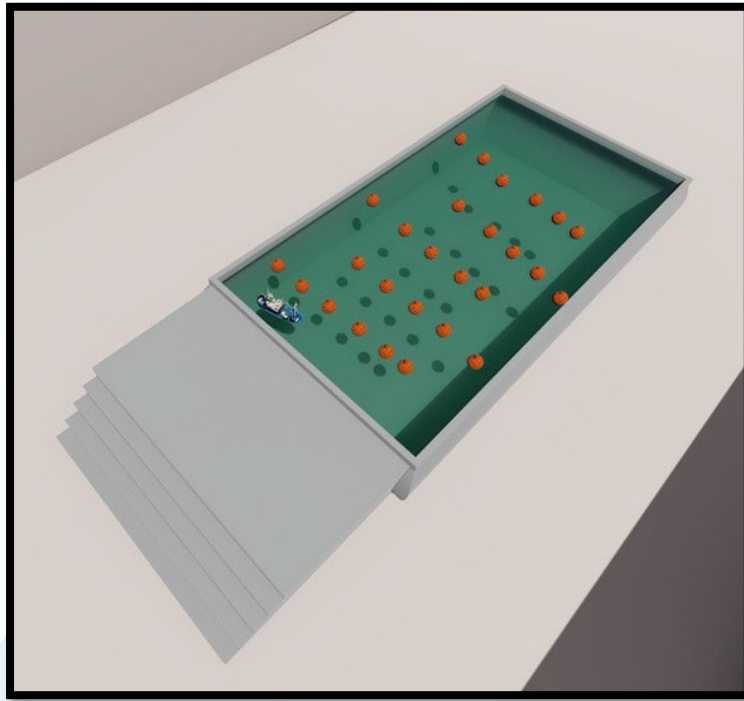


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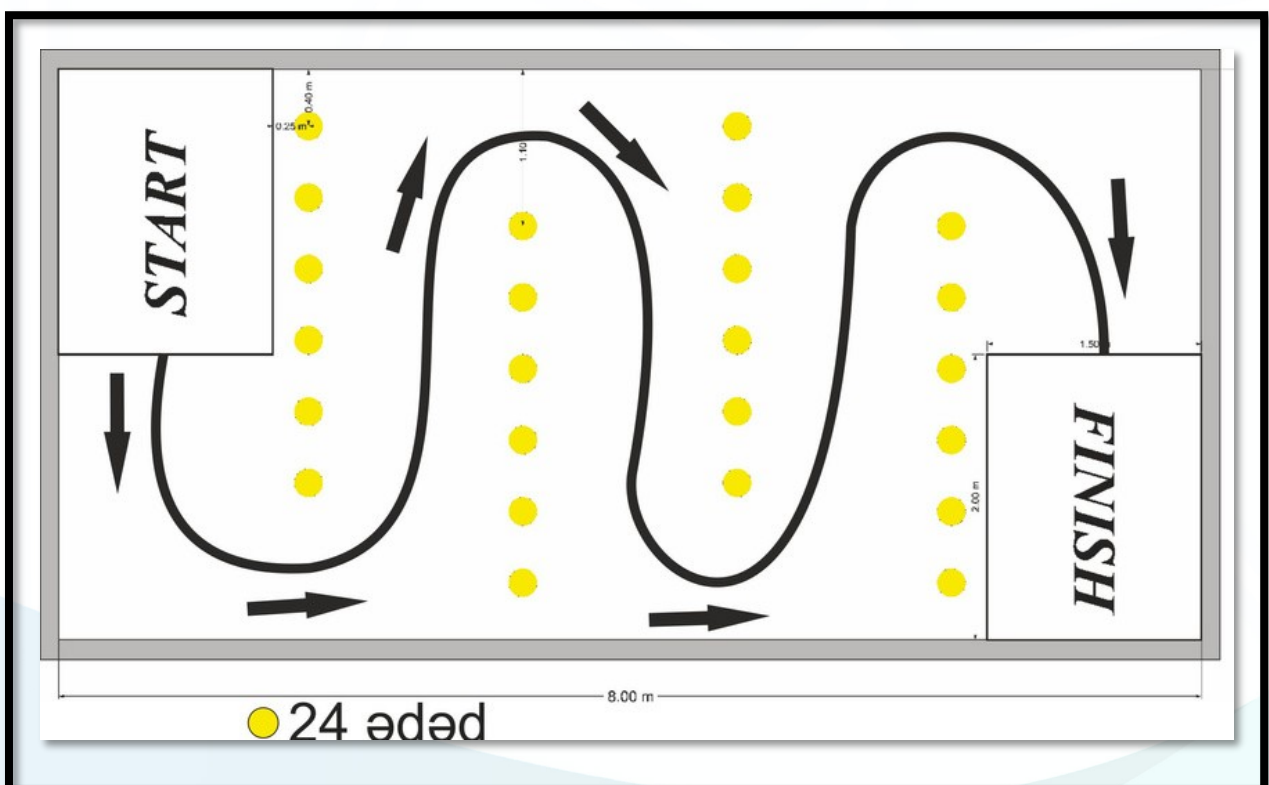


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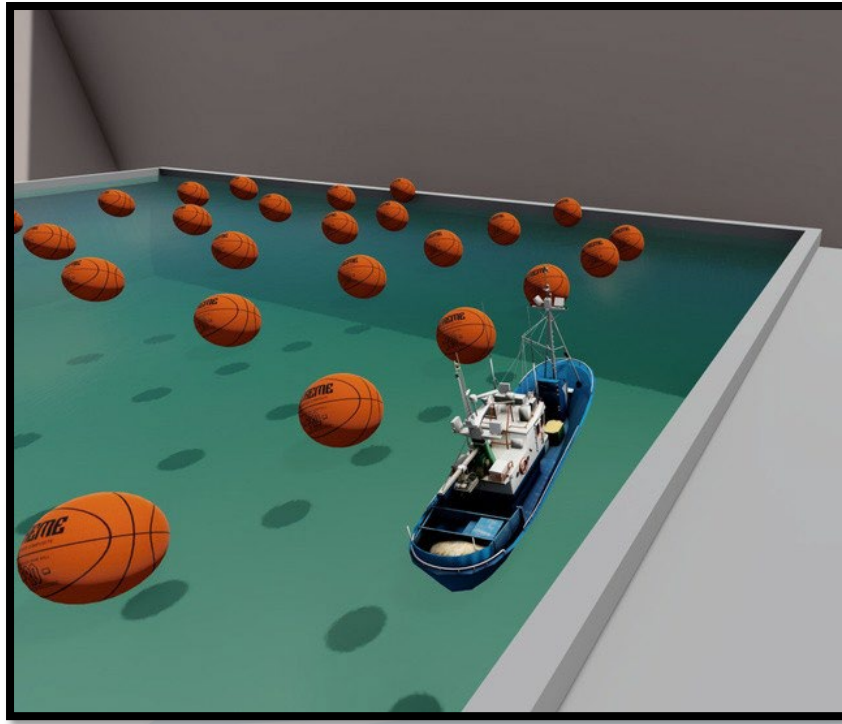


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image 6

10. Measurement of Obstacles

Obstacles have been placed along the movement course within the pool. The dimensions of the obstacles are indicated in the diagram.

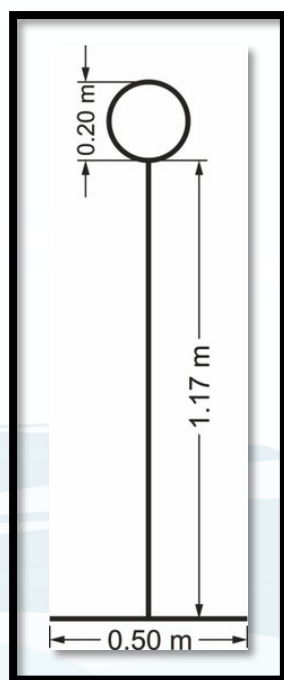


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11. Evaluation

- 11.1. The points collected during the selection stage will be the tiebreaker in the final only when there is a tie.
- 11.2. Teams will start the race with the "Start" signal and will race for 3 minutes. The team that reaches the finish zone first will be declared the winner. In each race, two teams will compete, and the winning team will advance to the next stage.
- 11.3. The teams selected through the draw will compete according to the following scheme. If a team does not participate in the race for any reason, they will automatically lose, and the opposing team will be declared the winner.

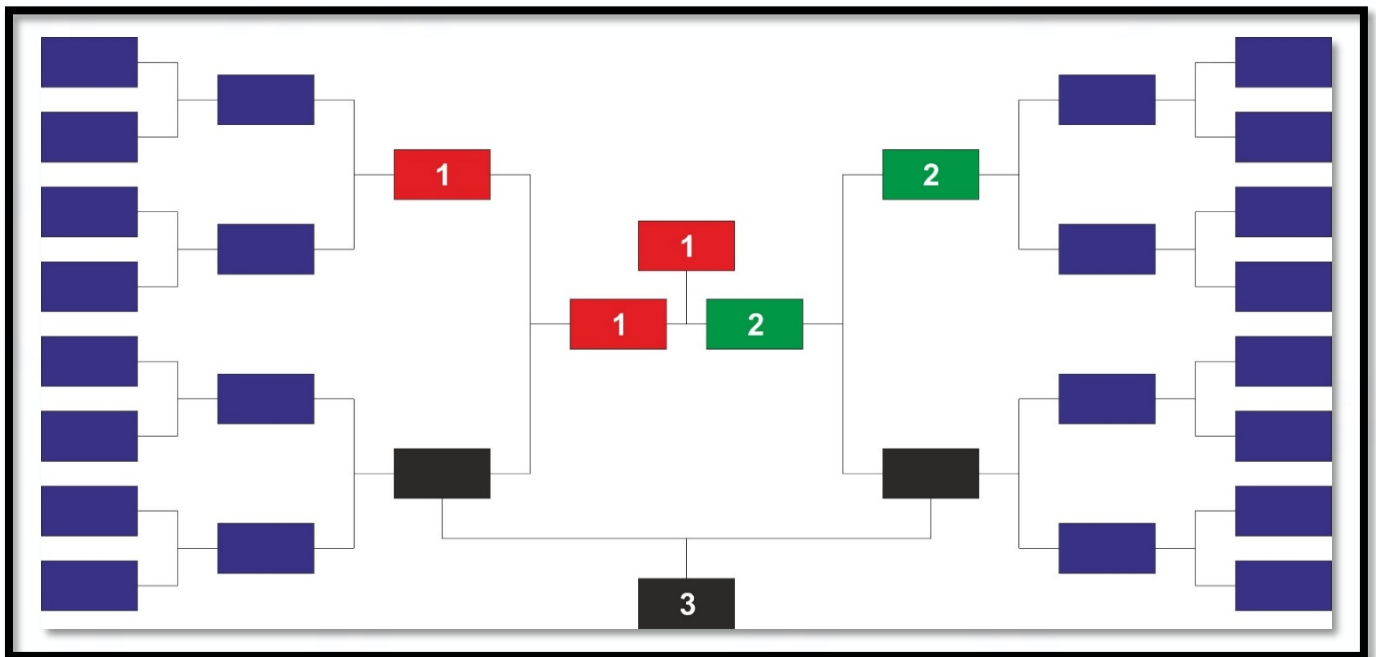


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