RULES AND REGULATION (FINALIZED)

General Rules

- A Tutorial Session will be given at (4/Dec/2021).
- Participants will purchase material either online/ local store by themselves and construct the ship model. **All the fees of material are responsible by participants themselves**. **SCBC committee does not responsible for any loses on participants for participating the event.**
- Participants will present their results in a video and submit them before (10/Mac/2022) during the preliminary selection, top 5 teams will be selected and notified by email, to enter the final round (19/March/2022). The judging criteria will base on these themes: Design, Performance, Technical & Presentation as stated in **Assessment Rubric**.
- Violation on the any rules: **General Rules, Eligibility, Materials Application Of Team and Submission Of Project** is **not allowed**. SCBC committee reserves the rights to disqualify the participation team without prior notice.
- During the Final Round, participants will be judged online by lecturers, question will be asked to assess their understandings and determine the $1^{st} – 5^{th}$ prize winners' team.
- Winners' team will be announced through SCBC Instagram and email to participants.

Eligibility

- This competition is open to all students currently studying in Higher Education Institution.
- Each team should consist 1-4 member(s), with their name included and team leader specified.

Materials

- Maximum of two R300C DC Motors as shown in the **Appendix**.
- Other motors are not allowed
- Maximum of two 600 ml bottles.
- Other size of bottles is not allowed.
- Your team is allowed to construct your own ship hull (without bottles)
- One Arduino board (Recommend ESP32 and ESP8266).
- Other materials are free to be decided / used by the participants

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Application Of Team and Submission Of Project

- The application of registration for each team is done by filling up the following Google Form:
  https://forms.gle/dd1CgCPoQJw4bdjt7
- The Google form/ Email for the submission of project will be **given during the construction period** before 10 March 2022, 11.59p.m. for participants to record a video presentation for their boat, based on the **Assessment Rubric** given. Late submission will be not taken into consideration.
- The video has the following requirements:
  - Duration of the video is between 10 - 15 minutes.
  - Video shall demonstrate the working model
  - Use a measuring tape / ruler to show your water surface is larger than 2*1.5m **provided there is no change of rules & regulations being notified during the Tutorial & Briefing Session 04/DEC/2021**.
  - The **video playback speed must not be increased**, so that the competition is conducted fair for every team.
  - Format of the video: MP4 or MKV in google drive's link / Youtube link

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Assessment Rubric

The general criteria for assessment are as follows:

|	Theme	Criteria	Marks
1.	Design (20%)	i) Floatability	5%
		ii) Stability	5%
		iii) Structural Rigidity	10%
2.	Performance (50%)	i) Instruction Test	10%
		ii) Straight Line Test	10%
		iii) Turning Circle Test	15%
		iv) Figure Of 8 Test	15%
3.	Technical (20%)	i) Working Planning & Execution	10%
		ii) Problem Understanding & Solution	10%
4.	Presentation (10%)	i) Fluency	5%
		ii) Structured Presentation	5%
	TOTAL		100%

1. Design

i) Floatability: Demonstrate the model is able to float

ii) Stability: Demonstrate the model is stable and able to floats upright.

iii) Structural Rigidity: Demonstrate the model structure is rigid and not constructed loosely.

2. Performance

Material Needed:
a) Minimum 2* 1.5 meter Water Surface
(e.g. Shallow areas of lakes, Mini Swimming Pool, Towing Tanks)
b) Obstacles

>2m Water Surface
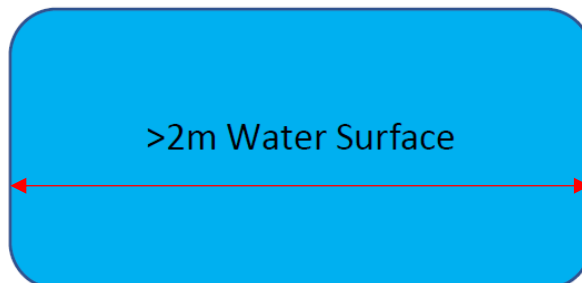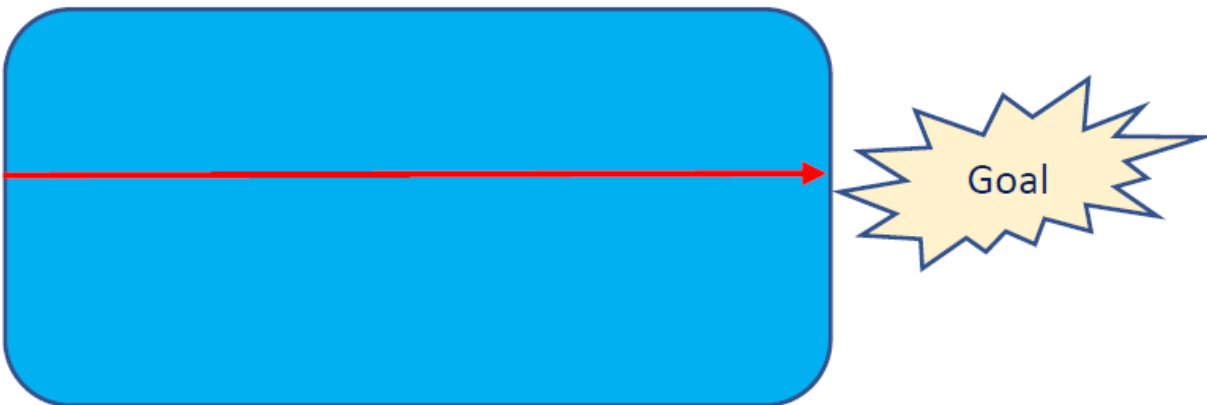
RULES AND REGULATION (FINALIZED)

Assessment

i) Instruction Test – Demonstrate the propellers on model are propagating upon receiving the instruction from the smartphone for forward, turn left, and turn right and stop turning. (The video should capture your instruction on phone and model without editing)

Assessment: Based on successfully control of propellers
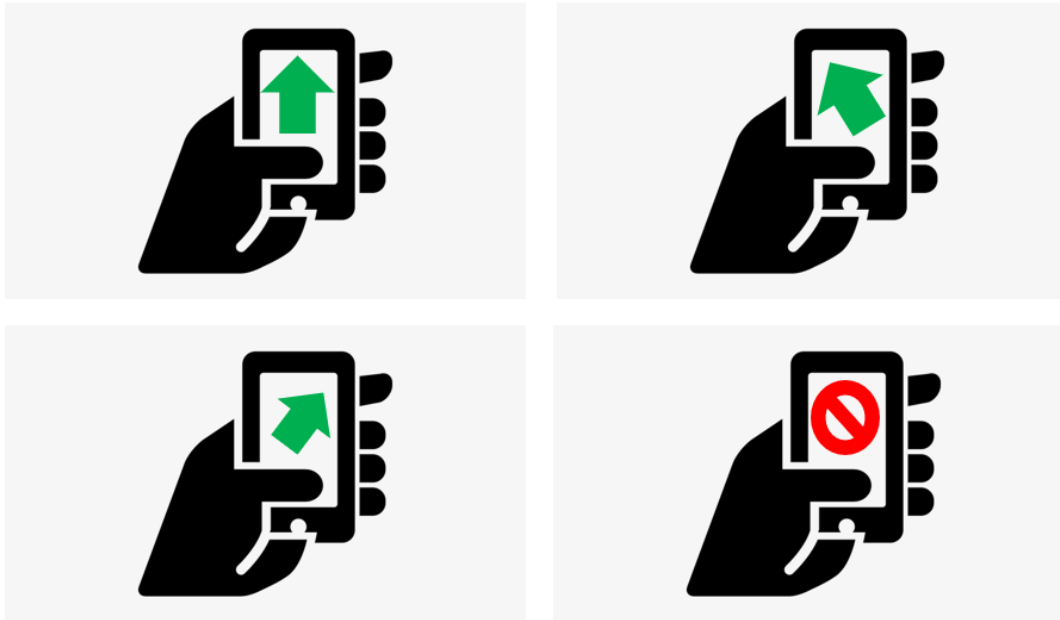
ii) Straight Line Test – let the ship maneuver form static motion to a distance of 2m.

 Assessment: Based on time taken (Higher marks for less time taken). The time taken will be recorded by the judges.
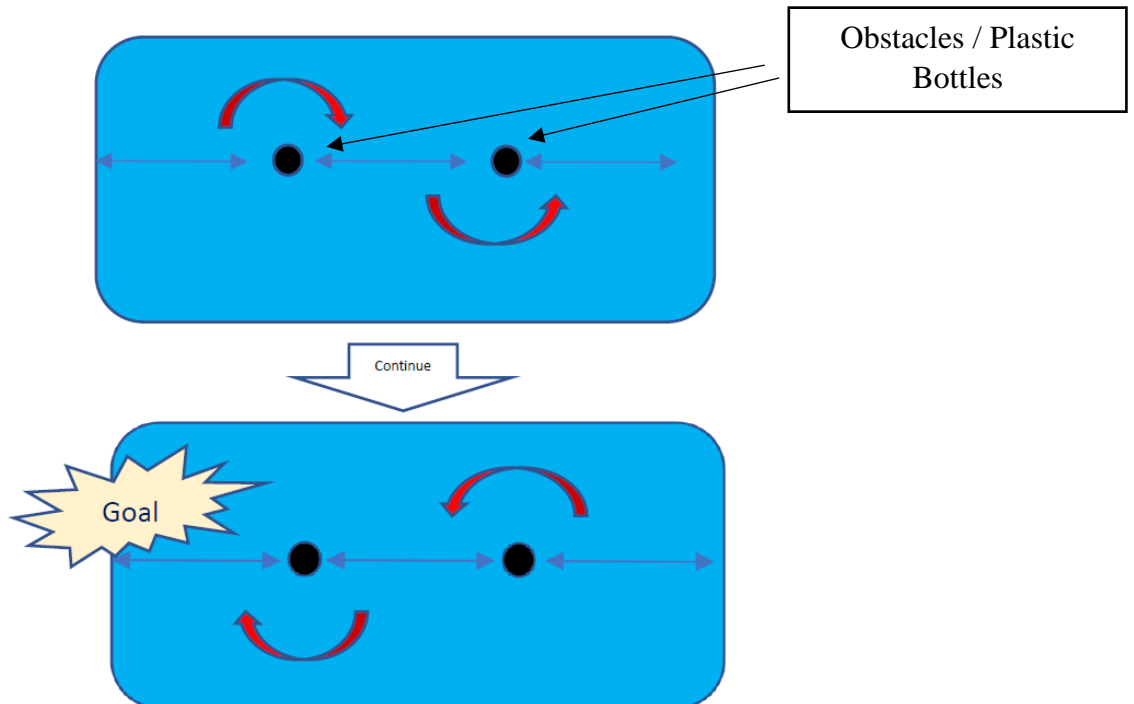
RULES AND REGULATION (FINALIZED)

iii) Turning Test – let the ship turn in either clockwise or anticlockwise direction around the obstacle for 3 rounds, record the time taken

Assessment: Based on time taken and times of collision on the obstacles (Higher marks for less time taken and less collisions). The time taken will be recorded by the judges.
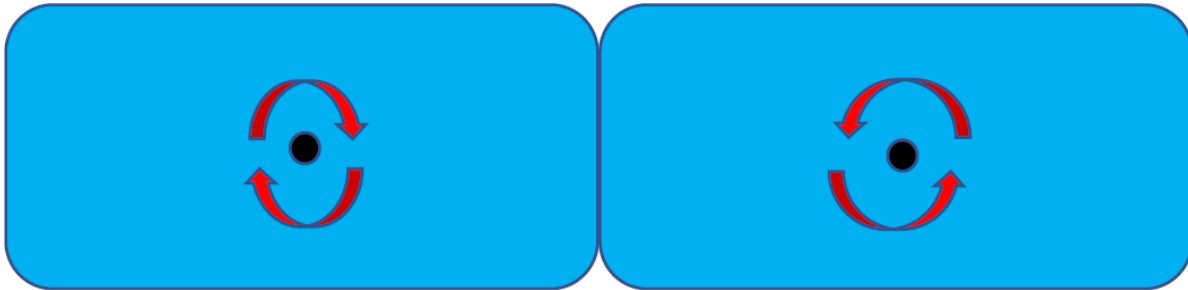
iv) Figure of 8 – place 2 1/1.5litre bottle as obstacles on center axis, at 1/3 distance from the end of the pool. Maneuver the ship around the obstacles in "S" pathway back and forth once.

Assessment: Based on time taken and times of collision on the obstacles (Higher marks for less time taken and less collisions). The time taken will be recorded by the judges.

Obstacles / Plastic Bottles

RULES AND REGULATION (FINALIZED)

3. Technical

i) Working Planning and Execution: Conceptualizes task and plans the execution as a rational, step-by-step process.

ii) Problem Understanding & Solution: Identifies and analyses problem, proposes creative solutions and choose appropriate strategies to solve the problem.

4. Presentation

i) Fluency: Speaks Fluently and deliver ideas effectively

ii) Structured Presentation: Presentation in a well-organized manner.

- The rubric of performance test may change if MCO persist at 4/DEC/2021, **any changes will be notified during the Tutorial & Briefing Session**.
- **Any violation against the rules** will result deduction in the project marks.

Award and Prizes

- Results and Winners will be announced at our Instagram Page "scbc_utm_2021" and through e-mail "SCBC20212022@gmail.com"
- E-certificates of participation are eligible for each participant.
- Winners for the first, second and third place will be given an amount of cash credit and special e-certificate.
- Cash will be credited to the team leader's bank account

1st place	2nd place	3rd place
RM 250	RM 150	RM 100

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Appendix

Contact Information

For any inquiries, please contact

- Whatsapp, Yew Qi Ming, +60175399067
- Email, SCBC20212022@gmail.com

Figure 1: Arduino ESP 32

Figure 2: 1.5-6VDC 7mm

Shaft Motor

Figure 3: Arduino ESP 8266

Figure 4: <= 600 ml bottle
(example)