

AQUABOT

Aim:

Build a robot that can successfully navigate in a water body at the same time capable of picking up the loads.

The Task:

Reach the final destination with minimum time while tackling as many loads as possible.

Event Structure:

The event will be conducted in two rounds.

- Round 1 (Elimination Round):**- The first round will be an elimination round in which the bots will complete the arena with picking up the loads. Though picking the loads is compulsory in this round.
- Round 2 (Final Round):**- In the second round, the bot must pick up a minimum number of loads, at the same time should not cause damage to victims positioned in the arena. All the judging criteria mentioned below will be applied.

Bot Specifications:

- Participants can use any materials to make the aquabot including plastics and thermo coals etc.
- The bot must be able to float in the water and must use propellers to navigate in the water body.
- The water body will be similar to a small pond.
- Standard power supply is provided, participants have to bring their own adaptors.

Judging Criteria:-

- The bot must start from starting point and start moving when the timer starts.
- The bot has to navigate successfully and be able to pick loads

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3. Points will be awarded for each and every load the bot picks up according to the arena.
4. The bot should avoid damaging victims at the same time picking the loads successfully.

Contact

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B - PLAN

B - Plan is a paper presentation competition where the participants exhibit their entrepreneurial passion and present their creative ideas to build the business of tomorrow. You don't need a plan to change the world, you just need an idea. B – Plan is a platform to present such ideas, small may they be but great will be the outcome.

Instructions

1. Participants are required to submit an abstract in about 200 words summarizing theme of their project work.
2. Information regarding acceptance of the abstract would be duly communicated via e-mail.
3. Participants are required to make a PowerPoint presentation of their project work and bring it on the day of the event.
4. Participants are requested to be clear, concise and lucid with their presentation, highlighting their observations and conclusions.
5. We encourage innovative ideas, so participants are requested to think 'out of the box' and try to come up with new prospects and not just copy and paste from any source.
6. Each participant would be allowed 7 minutes for their presentation, there would also be a warning bell after 5 minutes.
7. In any case if the participant exceeds the given time limit, he/she will be penalized in their marks.
8. Presentation can be given by a team consisting a maximum of 2 members.
9. All the participants are requested to send their abstracts by the end of 20th February, 2018 to the following contacts.

Contact

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CHAIN REACTION

Problem Statement:

Using the supplied materials, participating teams must complete a physical phenomenon by the process of chain reaction

Instructions:

1. It is a team based event. Each team can have 4 members at most.
2. Required materials and structures will be provided during the task and those materials can be used for completing chain reaction.
3. Each team will be allotted a fixed time limit, which will be same for all teams.
4. No extra material will be issued, so make sure that material provided is used judiciously
5. For each team only one chance is allotted.
6. Time will be told during the event.

Judging Criteria:

Teams will be judged according to the time taken to complete the challenge. The first team will be one who completes challenge in longest period, in case of ties time required to make the arranging the chain reaction will be considered

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META – SYMPOSIUM

Meta-symposium is an event under the umbrella of PRANAV which is the techno-management fest of NIFFT, RANCHI. In Meta-symposium participants are encouraged to showcase their talent in the area of research by providing a platform to express their work in the areas of metallurgy and its related aspects. It is a great platform to bring out the researcher inside you. In Meta-symposium participants can also show their innovative ideas which can be taken up as an essential project in the future.

- Nanomaterials
- Heat Treatment
- Device Materials
- Advanced Steel Technology
- Advanced Manufacturing Processes
- Biomaterials
- Advanced Materials
- Phase Transformations
- Polymer Technology
- Superconductivity and Cryogenics
- Super alloys
- Recent development in Iron and Steel Making

Instructions

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3. Participants are required to make a PowerPoint presentation of their project work and bring it on the day of the event.
4. Participants are requested to be clear, concise and lucid with their presentation, highlighting their experimental work, observations and conclusions.

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5. We encourage innovative ideas, so participants are requested to think 'out of the box' and try to come up with new prospects and not just copy and paste from any source.
6. Each participant would be allowed 7 minutes for their presentation, there would also be a warning bell after 5 minutes.
7. In any case if the participant exceeds the given time limit, he/she will be penalized in their marks.
8. All the participants are requested to send their abstracts by the end of 20th February, 2018 to the following contacts.
9. Presentation can be given by a team consisting a maximum of 2 members.

Contact

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MECHSTRUCT

Mechstruct is a technical event under the flagship of PRANAV. This is an event where you can test your knowledge of trusses and apply them in a real world situation to design structures which are stable, strong as well as cost effective.

Problem Statement:

Engineering Structure should be made with popsicles (ice-cream sticks), that structure ought to withstand loads.

Instructions:

1. Team should contain not more than 3 members.
2. Structure should be completed within stipulated time.
3. Structure should contain at least one truss.
4. 70 Popsicles will be provided per team & no extra sticks will be provided.
5. Height of the structure should be at least 3 ice-cream sticks.
6. Structure should be able to withstand sustainable load.

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MET – SOL

Met-Sol is also a technical event under PRANAV. In this event problems statements are released relating to industry or any common engineering problem that directly or indirectly affects common people and their metallurgical solutions are requested from the participants.

Problem Statement:

In view of recent train accidents occurring on the Kanpur route, which is possibly due to poor maintenance of the railway tracks, which has hampered its mechanical properties. Since many rail steels in India are chiefly fine pearlitic type of steel which has carbide particles which can nucleate cracks. For this case, what should be the replacement of the conventional rail steels?

Instructions

1. Participants are required to submit an abstract in about 200 words summarizing theme of their project work.
2. Information regarding acceptance of the abstract would be duly communicated via e-mail.
3. Participants are required to make a PowerPoint presentation of their project work and bring it on the day of the event.
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8. Presentation can be given by a team consisting a maximum of 2 members.
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ROBOWAR

Arena Specifications

1. The arena platform is made of wooden planks and is open, with boundaries of $\frac{1}{2}$ ft on all sides. It'll have openings in the opposite edges for putting the bot inside.
2. The dimensions of the arena shall be 8 ft x 8 ft.
3. A minimum of two traps will present in the arena.

*Dimensions of the main platform can change during the event

Bot Specifications

1. The bot should fit in the dimension box of 40 cm * 30 cm * 40 cm (l x b x h). This includes the weapon installed, but excludes external tanks or devices to control it.
2. The bot must be manually controlled.
3. The weight of the bot should not exceed 3 kg.
4. Standard AC VOLTAGE will be supplied at the venue.
5. There are no restrictions of number of motors used in making the bot.

*Any bot of the team, if found violating the rules and the decorum of the event, shall be immediately disqualified.

Event Structure

The event will consist of one-on-one matches between the teams. Thereafter, winning team proceeds to next round and losing team will be eliminated from the competition. The process will continue until a single team captures the winner's title.

Match Rules and Regulations:-

1. The aim of every match is to capture and secure the victim from the other bot for 90 seconds.
2. Duration of each match will be 3.5 minutes.
3. Maximum of 3 time outs are allowed during which teams can relocate their bots. However they are not allowed to make any changes in the bot.

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4. If after completion of both the rounds, no bot is able to capture the victim, winner will be selected after evaluating the damage incurred to both the bots.
5. Any change in the rules by the judge shall be intimated to the teams in the
a) Event arena.
6. The victim must always stay inside the arena and no damage should incur to it.
7. Robots can have any kind of cutters, flippers, saws, lifting devices, spinning hammers etc. as weapons. No damage must incur to the arena due to these weapons.
8. Participants must register latest by 20th February, 2018.

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WILD RACE

Aim:

Build a robot that can pick up loads (wooden blocks) across uneven topography.

The Task:

Reach the final destination with minimum time while tackling as many loads as possible.

Event Structure:

The event will be conducted in two rounds.

1. **Round 1 (Elimination Round):**- The first round will be an elimination round in which the bots will complete the arena with picking up the loads. Though picking the loads is compulsory in this round.
2. **Round 2 (Final Round):**- In the second round, the bot must pick up a minimum number of loads, at the same time should not cause damage to victims positioned in the arena. All the judging criteria mentioned below will be applied.

Bot Specifications:

1. Max weight of bot allowed = 2kg.
2. Maximum dimensions of Robot should be: 40 cm* 30 cm*40 cm (L*B*H).
3. Motors: There is no restriction on speed (High torque motors will be better for the terrain)
4. The terrain will be uneven and unduly.
5. Standard power supply is provided, participants have to bring their own adaptors.

Judging Criteria:-

1. The bot must start from starting point and start moving when the timer starts.
2. The bot has to move towards the on the given track passing through all the obstacles in the arena.
3. If the bot is stuck/gone out of the track a hand touch is allowed, but only 5 such touches will be allowed and points will be deducted.

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4. Points will be awarded for each and every load the bot picks up according to the arena.
5. The bot should avoid damaging victims as well as, should complete the track as soon as possible.

Arena Specifications:

The arena will consist of many parts

1. Rough Track
2. Zic-Zac
3. Slope
4. Curved Path
5. Hanging Bridges
6. Wet Sand Road

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