



# AISSMS

COLLEGE OF ENGINEERING

ज्ञानम् सकलजनहिताय



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Department of Electronics and Telecommunication

# SILICON FUSION 2024

RULEBOOK

- ❖ Air-O-Task
- ❖ Robo Mania
- ❖ Hackathon
- ❖ Blogathon

Department of Electronics and Telecommunication

**SILICON FUSION – 2024**

# **AIR-O-TASK**

**RULEBOOK**

**CODE: EX- 1**

## EX-1A AIR-O-TASK (DRONE)

**Venue:** AISSMS COE CAMPUS

**Max. Participants per team:** 2

**Registration fees:Rs.100/- (per participant)**

**Date:** 26<sup>th</sup> – 27<sup>th</sup> Sept. 2024

**Prize Amount-** 1<sup>st</sup> -10,000/-

2<sup>nd</sup>-7,000/-

**Name of the Student Event coordinator :**

- 1) Pranav Birade: 9022432441
- 2) Aditya Sonawane: 84215 72996

**Problem Statement:** The event is based on finding the agilest and fastest drone. Pass through given levels and the team with a maximum number of points wins.

**Path:** The path will consist of pillars, loops, bends, underpass, turbines, etc. placed in random sequence along an aerial track. It will end with the landing pad for testing maneuverability skills.

**Drone Specifications:**

- 1) Machine should fit into the dimension box of maximum 45cm x 45cm x 45cm and minimum 10cm x 10cm x 10cm.(5% tolerance)
- 2) Machines should be powered/propelled by a non-hydrocarbon engine.

**Event Rules:**

- 1) The Drone should fit into dimensions.
- 2) Student should carry identity cards of their respective institutes.
- 3) Team should be of maximum 2 members.
- 4) One participant/pilot can't be part of more than one team.
- 5) Maximum time is of 10 minutes to complete task.
- 6) Time will start at the moment the multi-rotor starts.
- 7) The timer will stop only when the drone finally lands on the landing zone.
- 8) Maximum 3 attempts will be given in case of ground touch and you will have to start from initial point.
- 9) The time measured by the organizers will be final and will be used for scoring the teams.

- 10) Time measured by any contestant by any other means is not acceptable for scoring.
- 11) Obstacles points will be given to you at the time of competition.
- 12) Result will be based on total obstacles cleared within minimum time.
- 13) The Second round will be a surprise spot round wherein the problem statement will be disclosed at the venue. The finalists of the Level 1 are eligible to compete in this round. You need not bring any additional inventory for competing in this.
- 14) Automatic Drones (like GPS, RADAR, Sonar, Ultra Sonic sensors, etc) are not allowed.
- 15) In case of any disputes/discrepancy's organizers decision will be final and binding.
- 16) The organizers reserve the right to change any or all of the above rules as they deem fit.

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**SILICON FUSION – 2024**

# **ROBO SOCCER**

**RULEBOOK**

**CODE: EX- 2A**

## EX 2A. Robo Soccer

**Venue:** AISSMS COE CAMPUS

**Registration fees:**Rs.100/- (per participant)

**Max. Participants per team:** 4

**Date:** 26<sup>th</sup> – 27<sup>th</sup> Sept. 2024

**Prize Amount-** 1<sup>st</sup> -10,000/-

2<sup>nd</sup>-7,000/-

**Name of the Student Event coordinator :**

- 1) Ashutosh Waghavkar: 94225 25719
- 2) Vaishnavi Sawale: 78230 32274

### **TASK:**

Build a bot according to the specification, so that bot can kick a table tennis ball into the opponent's goal post by following the rules.

### **Arena Specifications:**

1. The soccer field is 4 feet x 8 feet.
2. Blue field is 40 cm x 40 cm.
3. Goal post is 40 cm in length and 20 cm in height.
4. Boundary of the field will be covered by 15 cm's high wall.
5. There are two regions in the field, green field and blue field.
6. Plastic or Tennis ball will be used.

### **Bot Specifications:**

1. Each team is allowed to have only one bot.
2. Bot must fit into a cube of 30cm x 30cm x 30cm at all times. It may not expand beyond these dimensions during any point of the match. Violating this will cause immediate disqualification.
3. A battery with the voltage rating not exceeding 12 volts is allowed. This is an on- board power supply.
4. The weight of the bot should not exceed 5 kg's (this is including battery, motors etc., except spare components and the remote to control)
5. The remote control for the bot could be a wired or a wireless one. Grabbing the ball is not allowed. So, any such mechanisms are not allowed.

**Rules for Game Play:**

1. In first round, every match will be of 3 minutes. The duration for the matches in the next rounds will be decided by the organizers.
2. 10 point will be awarded per goal.
3. Team with maximum point will be declared winner for the match.
4. In case of a tie, an extra time will be given; the winner will be the one who first scores a goal. No time-outs will be given during extra time.
5. Match will start with the ball kept in the Red circle at center.
6. A goal will be considered only if the ball crosses the goal line completely.
7. Bot of each team can enter into the green field at any time, once the match is started.
8. At the starting of the match, bot should be in the blue field.
9. If the ball goes outside the field, then ball will be reset at initial position.
10. Grabbing the ball for more than 10sec is not allowed.
11. Any type of weapon is not allowed.
12. Standing inside the goal post is not allowed
13. The match will be 1 on 1(bot).
14. If the ball is stuck for more than 10 sec the match will be restart
15. Judges' decision shall be treated as final and binding on all.

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**SILICON FUSION – 2024**

# **ROBO WRESTLING**

**RULEBOOK**

**CODE: EX- 2B**



## EX-2B. Robo wrestling

**Venue:** AISSMS COE CAMPUS

**Registration fees:**Rs.100/- (per participant)

**Max. Participants per team:** 4

**Date:** 26<sup>th</sup> – 27<sup>th</sup> Sept. 2024

**Prize Amount-** 1<sup>st</sup> -10,000/-

2<sup>nd</sup>-7,000/-

**Name of the Student Event coordinator :**

- 1) Anand Maratha: 8495915230
- 2) Pandurang Jawale: 9579355280

### Robo-Wrestling

Bot Wrestling is basically a competition of two robots competing in an attempt to push the opponent out of the arena. These robots must be remote operated.

**EVENT STRUCTURE:** The arena consists of two concentric rings- inner blue one surrounded by a red boundary. The aim of the robots is to push the opposition robot out of the outer circle. Robot gains points for pushing the opposition robot in the red zone. Points are deducted from the teams score if it enters the red zone. The team that successfully completely pushes the opposition robot out of the red zone wins the match.

### ROUNDS:

#### Knockout Round

1. Two bots will compete against each other.
2. Each round will have duration of 2 minutes. The team which wins two rounds first (each of 2 min) will be declared the winner of the match.
3. The team that pushes the opposition robot out of the arena (i.e. out of the red zone) is declared as the winner of that round.
4. The scoring pattern will be uniform throughout and the scores will be considered only in case of a tie i.e. if no team is able to push the opponent's robot out of the arena in that round.
5. In case of a tie in a round (i.e. none of the team's robot is able to push the opposition robot out of the arena), the winner will be decided by the points earned by each team in that round.
6. In case of a tie in the match, the winner of the match will be decided by a tie breaker.
7. In case of odd number of teams qualified for next round, then team with the maximum points will get the benefit.

**TASK:**

1. Teams must build a robot which can be controlled using a remote (wired/ wireless).
2. The aim of the robot is to push the robot of the opposite team out of the arena. The team doing so wins the match.

**ARENA:**

1. The arena will be square in shape of side 3000 mm.
2. The main arena will be a circular in shape with a maximum diameter 2400 mm.
3. It will consist of two concentric circles of diameter 2000 mm and 2400 mm.
4. The inner circular area is blue in colour and is called the "Blue Zone" while the outer circular area is red in colour and is called the "Red Zone".
5. A centre white line of 30 mm width divides the arena into two equal halves.
- 6 There are white squares of 300 mm x 300 mm on the opposite sides of this line that indicate the starting zones of the two competing teams.
7. The arena will be made up of wood and the markings on it including all the zones will be drawn using paint.

**BOT SPECIFICATIONS:**

1. The machine should fit in a square of 300mm x 300mm. There is no height limit.
2. The weight of the robot must not exceed 5 kg (this is including battery, motors etc., except spare components and the remote to control).
3. The robot must be stable and must stand on its own at the beginning of the run when put in the starting point. Robots not fulfilling this criterion will be disqualified.
4. Any type of weapons (fire, spindle, hammer, etc.) is not allowed.
5. Readymade (market sold) robot with or without modifications will not be allowed in the competition.

**POWER SUPPLY:**

1. Machine must be completely self-contained and should receive no outside assistance. It should not use an energy source employing a combustion process.
2. Machine should have an on-board power supply. No external power supply is allowed.
3. Voltage on the machine at any point should not exceed 24 V DC.

**POINTS:**

1. Each team earns 10 points for pushing the opposition in the red zone and 50 points for pushing the opponent out of the red zone.
2. If a robot goes in the red zone on its own without being pushed by the opponent robot, then 10 points will be deducted from the teams score entering the red zone. If a robot goes out of the red zone on its own without being pushed by the opponent robot then 20 points

will be deducted from the team's score exiting the arena. No points will be given to the opponent in such case.

3. If a robot is not in working state (i.e. no movement is seen) at the start of a round for any reason, 20 points will be deducted from that team.

4. If there is still a tie on the basis of the scores then a rematch of 1 minute will be played by the involved teams until we get a winner.

5. Judges' decision shall be treated as final and binding to all.

6. The organizers reserve the rights to change any or all of the above rules as they deem fit

#### **GENERAL RULES:**

1. Any team that is not ready at the time specified will be disqualified from the competition automatically.

2. The machine will be checked for its safety before each match and will be discarded if found unsafe for other participants and spectators.

3. Team members will not be allowed to step in the arena. Only organizers are allowed in any situation. The team will be disqualified if any of the team members steps on the arena without the approval of the presiding organizers.

4. Only one member of the team is allowed to operate and one member for handling the robot.

5. Participants are not allowed to keep anything inside the arena other than their robot.

6. No robot is allowed to use any flammable, combustible, explosive or potentially dangerous processes.

#### **RULES:**

1) Knockout Matches: Each match consists best of 3 rounds.

2) Before the match 1minute setting time will be given. The run time clock will commence after that 1minute time-limit even if the handler is still making adjustments to the robots.

3) 60 seconds setting time will be given in between the rounds.

4) The robot must start from the starting point. The operator may abort run at any time. In such a case, the opposite team will be declared as the winner.

5) No hand touches are allowed in between the matches unless both the operators of the respective robots want a restart.

6) Use of jammers is not allowed. Participants found violating this rule will be disqualified from the competition.

7) There can be interference problems related to RF modules in case you are using them. It is the responsibility of the participants to overcome it. Organizers are not responsible for it.

8) In every match each team will be given 2 time-outs of 60 seconds (each).

9) Judges' decision shall be treated as final and binding on all.

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**SILICON FUSION – 2024**

# **HACKATHON**

**RULEBOOK**

**CODE: EX- 3**

## EX 3 – Hackathon

**Mode of conduction:** Both Online and Offline

**Registration fees:** 100/- (per participant)

300/- for group of four

**Venue(For offline mode):** AISSMS COE CAMPUS

**Prize Amount-1<sup>st</sup>** -8,000/-

2<sup>nd</sup>-5,000/-

**Name of the Student Event coordinator :**

- 1) Likhita Bujade: 9860423339
- 2) Jayesh Roman: 80801 22587

### **Abstract:**

Hackathons and other kinds of competitions are popular and important forms of modern university industry interactions. Originating in information technologies they spread to all other fields. At the same time, "hackathon " is rather an abstract buzzword that can be used to denote a sleepless competition of creative app development, team-based brainstorming in a company 's office at night, or a collaborative and focused work session in a research lab.

### **Rules of Hackathon:-**

#### **Overview**

- 1) Each team should consist of up to **4 student** members and a faculty guide.
- 2) Team members can be from any discipline of any college.
- 3) The team leader has to fill the registration form with the necessary details
- 4) The solution for the competition should be related to the statement only.
- 5) The solution should be self-identified and technology-oriented. In case of any plagiarism/ ChatGPT team will be disqualified
- 6) Multiple solutions to a problem(s) can be submitted by a single team.
- 7) Teams will have to present the solution in presentation format
- 8) Final evaluation will be done by evaluators at AISSMS only.
- 9) Participation certificates will be granted to all the teams

#### **• Preliminary Round**

1. Preliminary round will be held in 2-3 days span prior to the main event
2. Preliminary round will be held in online mode
3. Teams will be added to a common WhatsApp group.
4. A link will be shared 5 minutes just before the round begins.

5. Link will be closed after 1 hour the round starts. Teams will have to submit their solutions before the link terminates.
6. Selection for final round will be based on solution provided within time limit.
7. Decision of the evaluators will be final.

**Final round:**

1. Final round will be held in both online and offline mode.
2. Time span for solving the problem statement will be 4 hours.
3. Teams entering from outside Pune can enter the final round in online mode, but rest of the teams will have to attend the round in offline mode.
4. Decision of the evaluators will be final.
5. Winning teams will be selected from both online and offline mode.
6. Results will be declared on 26<sup>th</sup> September 2024.

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**SILICON FUSION – 2024**

# **BLOGATHON**

**RULEBOOK**

**CODE: EX- 4**

## EX 4 –Blogathon

**Mode Of conduction:** Online

**Registration fees:** 100/- (per participant)

**Prize Amount-1<sup>st</sup>** -5,000/-

2<sup>nd</sup>-3,000/-

**Name of the Student Event coordinator :**

- 1) Sohan Ghadge: 9307744007
- 2) Siddhant Chaugale: 7262942747

**Topic:**

### Indian Knowledge System

With the New Education Policy 2020 amendment, the Indian government is trying to venture into our ancient Gurukul teaching system and upskill the students by allowing them to choose different subjects in different streams. This will help the students to learn and explore new fields in Arts, Commerce and Science rather than just choosing typical career paths. Students should also have employable skills that will help reduce unemployability in our country.

With the help of the above information write a blog on the impact of the Ancient Indian Knowledge system on the new education system implemented by the government under the New Education Policy scheme. Explain your view on how the government should deploy a new education model to uplift and explore critical and analytical skills required for students to uplift their careers.

Rules: -

- 1) After registration participant will be added to whatsapp group and google form link will be shared on the group where participant can upload their work.
- 2) Write your personal information (Full name, institute name, Class etc.) on the first form provided by the Blogathon team.
- 3) The blog should have a length of about 400-500 words.
- 4) Write the blog in a Word document &upload the document on the given form using PDF format only.
- 5) Any use of Emojis, Stickers or GIFs is prohibited.



- 6) The usage of images in the blog is appreciated to make it more appealing and attractive.
- 7) Do not copy the blog from the internet, ChatGPT or any other platforms. Plagiarism reports will be taken for every blog and if any copy of any form is found, that entry and the person will be disqualified from this competition and prohibited from participating in any other Engineering Today competitions.
- 8) Marks will be given on creativity, grammar, vocabulary, approach
- 9) **The form will not accept any entries after 5 pm on 25<sup>th</sup> September**
- 10) The result of this competition will be declared on the 26<sup>th</sup> or 27<sup>th</sup> of September 2024.

**Registration and File submission link:**

<https://docs.google.com/forms/d/12TOMr1lzt3mtgf4fXjT3H49lc1IIWF05WRNhVBltrDM/edit?pli=1>

**Student representative**

**Samruddhi Kolapkar**

**Faculty Coordinator**

**Mrs. A. A. Randive**

**H. O. D. E&TC Department**

**Dr. S. B. Dhonde**