HO CHI MINH CITY UNIVERSITY OF FOOD INDUSTRY
FACULTY OF ELECTRICAL - ELECTRONICS ENGINEERING

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

Ho Chi Minh City, October 03, 2022

03_2022/KH-DDT

PLAN

Re: Organization of the Robotics Competition 2023

Implementing Plan No. 786/KH-DCT dated November 9, 2018, of Ho Chi Minh City University of Food Industry on organizing academic activities for students.

Based on the master plan No. 01/KH-DDT of the Faculty of Electrical - Electronics Engineering on organizing academic activities for students in the 2019 - 2020 academic year.

The Faculty of Electrical - Electronics Engineering develops the plan to organize the **Robotics Competition 2019** as follows:

I. PURPOSE, REQUIREMENTS

1. Purpose

To create an intellectual and creative playground for students of the Faculty of Electrical - Electronics Engineering as well as all students of Ho Chi Minh City University of Food Industry..

2. Requirements

- Students improve their skills, master professional knowledge, and teamwork skills.
- To create a broad movement of learning and research throughout the faculty and the university.

II. TIME AND VENUE

1. *Time: From February 14, 2023, to May 30, 2023.*

- Field testing time (expected): Friday, May 11, 2023; teams must participate in the technical parameters inspection session in the morning, after which they will be allowed to test the competition field for a maximum period as prescribed. After the teams finish the field testing time, team representatives will proceed to draw lots for the group stage and receive the competition schedule. If any team does not have a representative attending, that team is considered to have forfeited.
- Group stage (expected): Saturday, May 17, 2023, and Sunday, May 18, 2023.

- Finals and closing/awarding ceremony (expected): Sunday, November 30, 2019.

2. *Venue:* Practice Workshop of the Faculty of Electrical - Electronics Engineering, address: 31 Che Lan Vien Street, Tay Thanh Ward, Tan Phu District.

III. PARTICIPANTS

All students currently studying at Ho Chi Minh City University of Food Industry.

IV. REGISTRATION AND RULES

- Students independently select members to form a participating team..
- Each team has a maximum of 3 members.
- Each team delegates a team leader who is the representative for the team and works directly with the Organizing Committee.
- Each team registers according to the form and pays a guarantee fee of 100,000 VND to the organizing committee at the Office of the Faculty of Electrical - Electronics Engineering, address: 31 Che Lan Vien, Tay Thanh Ward, Tan Phu District (so that teams will be more responsible for the competition when registering). This fee will be refunded after the team participates in the competition; any registered team that does not compete will not be refunded.
- Depending on the number of registered teams, the organizing committee will divide them into groups or use a knockout format.

V. SCHEDULE, CONTENT, AND IMPLEMENTATION

1. *Implementation schedule:*

- From February 14, 2023, to May 10, 2023: Roll out to students in all classes.
- From February 14, 2023, to May 10, 2023: Collect the list of teams.
- May 10, 2023: Finalize the list of participating teams.
- May 11, 2023: Teams test the field, draw lots for groups, and announce the competition schedule.
- May 17-18, 2023: Opening ceremony and qualifying rounds.
- May 25, 2023: Final round competition, closing ceremony, and awarding.

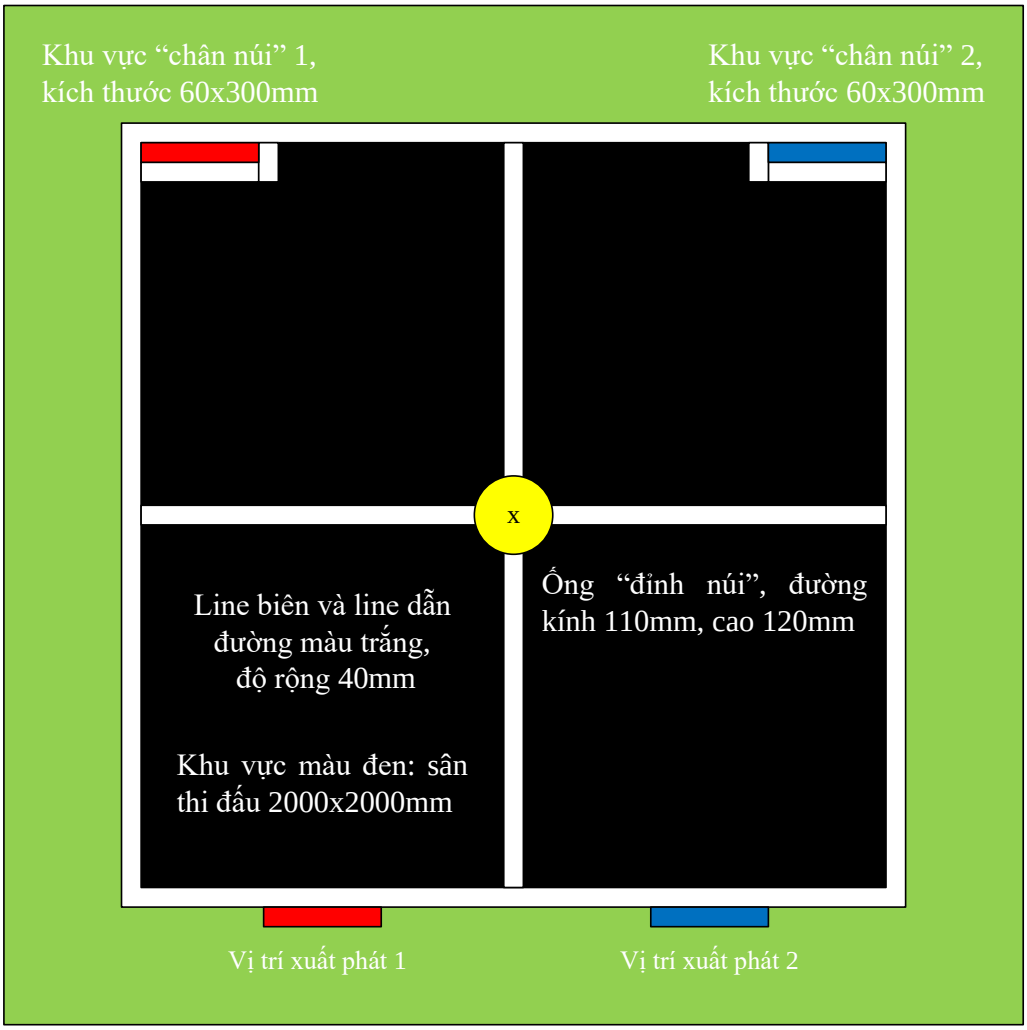
2. *Team tasks:* Each team designs and manufactures an autonomous robot according to the following regulations:

- Overall dimensions: ≤ 300x300mm, unconstrained height. After starting, the robot is allowed to change its dimensions.
- Weight: Maximum 10kg.

- The power source used for the robot must not exceed 24VDC.
- The robot may only contact the competition floor through its wheels (other parts of the robot must have a minimum clearance of 10mm from the competition floor to avoid damaging it).
- The autonomous robot moves (line-following or non-line-following) and performs competition tasks without remote control via laser, infrared, etc…

3. Competition field:

- The competition field is made of wood with dimensions of 2000mm x 2000mm.
- The field surface is black, with white guiding lines and boundary lines; the line width is 40mm.
- The robots of both teams must be placed at their respective starting lines before the match begins.
- On the competition field, at the two far corners, there are two "mountain foot" areas measuring 60x300mm. In each of these areas, four white cubes measuring 57x57x57mm are placed. The top face of each cube is numbered "1" or "2" according to the area's position.
- In the middle of the competition field, there is a cylindrical tube Ø 110mm, black with two white stripes, 120mm high, representing the mountain peak



4. Competition Rules:

- Each match consists of two teams, with robots prepared at their corresponding starting positions.
- The competition time is 120 seconds (2 minutes).
- Each team chooses their starting position by drawing lots before each match.
- After the referee allows the match to begin, a team member presses the start button for the robot.
- Any team whose robot moves completely out of the competition field area (determined by the boundary line) will be directly disqualified as the loser.
- The team that manages to drop two consecutive cubes (regardless of whether they belong to their team or the opponent) into the "mountain peak" tube will immediately win, which is called "Reach".
- If not, at the end of the competition time, the team with the topmost cube in the "mountain peak" tube wins.

- In case there are no cubes in the "mountain peak" tube, the team that scores more points will win.
- Points in each match are calculated as follows:

    + A robot grabbing one cube out of its own "mountain foot" area scores 1 "accumulation" point.

    + A robot dropping one of its own cubes into the "mountain peak" tube scores 2 "accumulation" points.

    + A robot grabbing one cube out of the opponent's "mountain foot" area scores 2 "steal" points.

    + A robot dropping an opponent's cube into the "mountain peak" tube scores 2 "steal" points.

    + A robot grabbing an opponent's cube out of the "mountain peak" tube scores 3 "steal" points.

    + The final score of each team is the sum of the "accumulation" points and "steal" points scored by that team during the competition time.
- Each team is allowed to retry (restart) their robot 1 time if the team's robot does not move (retry is only permitted when the robot is not affected by the opponent's robot).
- The robots of each team are not allowed to use water, chemicals, explosives, or any form of liquid, nor emit fire during the competition (which may cause damage to the arena), and must not pose a danger to spectators. Any team violating this will be directly disqualified.
- Other fouls not mentioned in the rules will be handled according to the decision of the referee directly officiating the match. Teams can raise questions or appeal the match results with the organizing committee and referees after the match concludes if they have evidence for that match.

5. Competition Format:

- Group stage: Teams play in a single round-robin format to earn points. The winning team receives 3 points, the losing team receives 0 points. If two teams draw, each team receives 1 point. The two teams with the highest points in each group will advance to the next round. In case two teams have equal points, the head-to-head record will be considered as the priority. If two teams draw in the group stage, they

will have a rematch under knockout rules to select the team advancing to the next round.

- Knockout stage: Teams will compete in a format where the first place of one group plays against the second place of another group and vice versa, following the alphabetical order of groups A, B, C... If two teams have equal points, priority will be determined in the following order:
    + Total "accumulation" points during the competition time.
    + Scoring "steal" points first.
    + Scoring "accumulation" points first.

6. Handling of Violations:

- Robots that do not comply with the design requirements (dimensions, weight, etc.): disqualified.
- Robots starting before the permitted signal: match paused and restarted.
- Intentionally using remote controls via infrared waves or lasers: directly disqualified.
- Members acting belligerently or behaving in an uncultured manner within the school environment: directly disqualified.

VI. PRIZE STRUCTURE

- 01 Championship Prize: 5,000,000 VND.
- 01 Second Prize: 4,000,000 VND.
- 01 Third Prize: 3,000,000 VND.
- 01 Consolation Prize: 1,000,000 VND.

VII. ESTABLISHMENT OF THE ORGANIZING COMMITTEE

Mr. Van Tan Luong, Vice Dean	Head of Committee
Mr. Nguyen Phu Cong, Deputy Head of Automation Department	Member
Mr. Bui Quang Huy, Staff	Member
Mr. Hoang Dac Huy, Lecturer	Member
Mr. Duong Van Khai, Lecturer	Member
Mr. Tran Hoan, Lecturer	Member
Ms. Tran Thi Nhu Ha, Lecturer	Member
Mr. Tran Van Hai, Lecturer	Member
Mr. Doan Xuan Nam, Lecturer	Member
Mr. Tran Trong Hieu, Lecturer	Member
Mr. Le Minh Thanh, Lecturer	Member

- Above is the Plan for organizing the Robotics Competition 2019 of the Faculty of Electrical - Electronics Engineering; relevant individuals are requested to fully and strictly implement the contents of this plan.

Recipients:
- Department of Student Affairs & Educational Inspection
- Filed at Faculty Office

VICE DEAN

Lê Thành Tới