

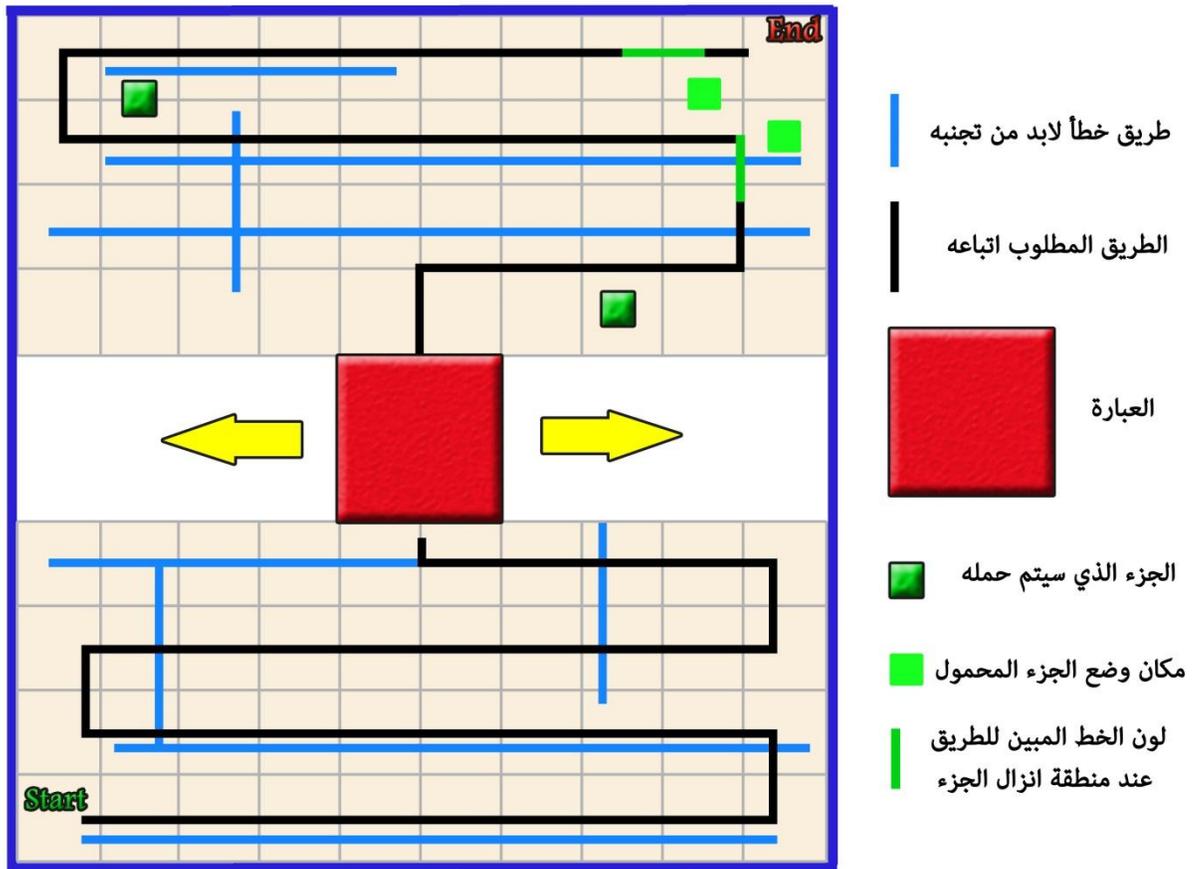
Robotics Competition

1.	Preface
	<p>Your robot is asked to navigate through a landscape field to reach the end zone; some obstacles will be introduced to show your robot's skills. Some objects must be collected to build a castle in the end zone tile. Time and technical skills are the essential. Get ready.</p>
2.	The Participant
	<ul style="list-style-type: none"> • Each Participant must have only one robot in the field. • The Participant will have to self-govern himself during the long stretch of hours at the competition. • The Participant can move the robot only when s/he is told to do so by a referee. • Any spectators are to stand at least 150 cm away from the arena while their robot is active, unless otherwise directed by a referee. • No one is allowed to touch the arenas intentionally during a scoring round.
3.	The Robot
	<ul style="list-style-type: none"> • Robots must be controlled autonomously. The use of a remote control (wired or wireless) or manual control, or passing information (by cables, other interference, etc.) to the robot is not allowed. • Robots must be started manually by the Participant. • Pre-mapped type of dead reckoning is prohibited. (Movements predefined based on known locations). • Robots must not damage any part of the arena in any way. • Any robot kit or building blocks, either available on the market or built from raw hardware, may be used, as long as the design and construction of the robot are primarily and substantially the original work of the students. • For the safety of participants and spectators, no lasers are allowed on any robot.
4.	Environmental Conditions
	<ul style="list-style-type: none"> • Participants must come prepared to adjust their robots to the lighting conditions at the venue. • Lighting and magnetic conditions may vary along the day of the contest. • The arena may be affected by magnetic fields (e.g. generated by under floor wiring and metallic objects). • Participants should prepare their robots to handle expected lightning interference. While the organizers and referees will try their best to minimize external lighting interference, it is not possible for them to foresee all unexpected ones such as camera flash from spectators. • Where possible, competitors will have access to practice arenas for calibration, testing and tuning throughout the competition.
5.	Inspection
	<ul style="list-style-type: none"> • The robots will be examined by a panel of referees before the start of the tournament and at other times during the competition to ensure that they meet the constraints described above. • It is the responsibility of Participants to have their robots re-inspected, if their robots are modified at any time during the Competition. • Students will be asked to explain the operation of their robot, in order to verify that the construction and programming of the robot is their own work in means of presentation. • Students will be asked questions about their preparation efforts, and may be requested to answer surveys and participate in video-taped interviews for research purposes. "presentation " • All Participants have to submit their codes during the first day of the competition. The code is never shared with other Participants.
6.	Violations
	<ul style="list-style-type: none"> • Any violations of the inspection rules will prevent that robot from competing until modifications are

	<p>applied.</p> <ul style="list-style-type: none"> • However, modifications must be made within the time schedule of the Competition and Participants must not delay Competition play while making modifications. • If a robot fails to meet all specifications (even with modification), it will be disqualified from that round (but not from the Competition). • No Coach or teacher assistance during the competition is allowed.
7.	Start of Play
	<ul style="list-style-type: none"> • A run begins at the scheduled starting time whether or not the Participant is present/ready. Start times will be posted prominently around the venue. • Once the run has begun, the robot playing is not permitted to leave the competition area for any reason. • A robot will be given a maximum time of 5 times (15 minutes each) to both calibrate their robot and complete the course. • The time for each run will be kept by the referee. • Calibration is defined as taking sensor readings and modifying the robot's programming to accommodate such sensor readings. Any and all pre-mapping activities will result in immediate disqualification of the robot for the round. • Teams may calibrate their robot in as many locations as desired on the arena, but the clock will continue to count down. • Once a team is ready to perform a scoring run, they must notify the referee. To begin a scoring run, the robot is placed on the starting tile as indicated by the referee. Once a scoring run has begun, no more calibration is permitted. • Modifying the robot during a run is prohibited; which includes remounting parts that have fallen off. • All parts that the robot is losing intentionally or unintentionally are left in the arena until the run is over. Neither the team nor a judge is allowed to remove parts from the arena during a run. • Participants are not allowed to give their robot any advance information about the field. A robot is supposed to recognize the field by itself.
8.	End of Play
	<ul style="list-style-type: none"> • A Participant may select to stop the round early at any time. In this case, the Participant must indicate to the referee his desire to terminate. The Participant will be awarded all points achieved up to the call for end of round. • The round ends when the time expires, when the Participant calls the end of the round or when the robot is successfully reached the end zone.
9.	Behavior and Fair Play
	<ul style="list-style-type: none"> • Robots that cause deliberate or repeated damage to the arena will be disqualified. • Humans that cause deliberate interference with robots or damage to the arena will be disqualified. • It is expected that the aim of all teams is to participate fairly. • Participants should be mindful of other people and their robots when moving around the tournament venue. • Participants are not to enter setup areas of other teams, unless explicitly invited to do so by team members. • Participants who misbehave may be asked to leave the building and risk being disqualified from the tournament. • These rules will be enforced at the discretion of the referees, officials, tournament organizers and local law enforcement authorities. • Fraud and misconduct are not condoned. Fraudulent acts may include mentors working on the software or hardware of students' robot(s) during the competition.

- The competition reserves the right to revoke an award if fraudulent behavior can be proven after the awarding ceremony took place.
- If it is clear that a mentor intentionally violates the rules, and repeatedly modifies and works on the students' robot(s) during the competition, the mentor will be banned from future participation in competitions.
- Participants that violate the rules can be disqualified from the tournament.
- In less severe cases of violations of the rules, a Participant will be given a warning. In severe or repeated cases of violations of the code of conduct, a Participant can be disqualified immediately without a warning.

10. Play field



11. Dimensions

- Total field dimension is 3000 mm x 3000 mm.
- Start zone dimension is 300 mm x 300 mm.
- End zone dimension is 300 mm x 300 mm.
- Each tile is 300 mm x 300 mm.
- All dimensions might be subjected to +/- 20 mm tolerance.
- Walls that make up the maze are at least 15 cm high. The walls are white, or close to white.

12. Floor

	<ul style="list-style-type: none"> • The floor has a white or close to white tone. The floor may be either smooth or textured (like linoleum or carpet), and may have steps of up to 3 mm height. • A tile is defined as a 300 mm x 300 mm space, which is aligned to the grid made up by the walls with +/-20 mm variation.
14.	Line
	<ul style="list-style-type: none"> • The floor is composed of 300 mm x 300 mm tiles with a black line for a robot to follow. The black line, 10-20 mm wide, may be made with standard electrical (insulating) tape or printed onto paper or other materials. The black line forms a path on the floor. • Due to the nature of the tiles, there may be a step and/or gap in the construction of the arena. These are not intentional and will be minimized as much as possible by the organizers.
15.	Scoring
	<ul style="list-style-type: none"> • A robot is awarded points for successfully negotiating the field and each hazard (speed bumps, intersections). • Successfully negotiating is defined as entering through completely following the line, negotiating all line gaps, intersections, speed bumps, obstacles. • Failed attempts at negotiating elements of the arena are defined as “Lack of Progress”. <ul style="list-style-type: none"> ○ Points available for successfully negotiating the field = 40 points • Points available for successfully completing a tile that has speed bumps. 5 points per speed bump tile. • Points available for successfully completing a tile that has an intersection. 5 points per direction through intersection tile. • Points available for successfully crossing the moving ferry. 20 points. • Points available for successfully rescuing the princess to the end zone. 10 points. • Points available for successfully constructing the castle at the end zone. 20 points. • A Lack of Progress occurs if the robot is stuck in the same place or loses the black line without regaining it by the next tile in the sequence. • A Lack of Progress occurs if the robot does not follow the correct path after an intersection tile. • The Participant can also call for a Lack of Progress at any time (s)he wants (for example if the robot is in danger). • Points available on the assessment of code , electrical and mechanical design = 20 Points.