

UNA Robotics Competition: General Rules

The following rules cover the administration of the program. Please contact the organizers if any clarification is needed.

Eligibility Rules:

1. The competition is open to all students attending a school (public, private, or home schools) or an approved approved community group (4-H, church group, Scouts). Please check with the coordinator if you have a question.
2. Students from all grade levels are invited to participate in three categories: Primary (K-2), Elementary (3-5), Middle School (6-8) and High School (9-12). Teams with participants from multiple categories will participate at the level of the oldest team member. We reserve the right to change the boundaries of the categories (e.g., categories from K-6, 7-9, and 10-12 to balance out the teams for awarding fairness). Categories may change up to game day.
3. Teams will be made up of 3-5 students each.
4. Participants who arrive to the contest late will not be given extra time to complete the competition.
5. All fees must be paid by the due date. Fees are \$25/team*. Purchase orders are not accepted. Payment by check only. **Make check payable to “The University of North Alabama”**. Mail all forms and fees to [“Lee Brownell-AMSTI, 1640 Tune Ave, Florence, AL 35630”](#) Or, you may drop them off at the AMSTI office at the same address before 4:30pm any day UNA is in session.
6. Teams will compete at the same time as other categories. However, judging for awards will be within their category. One Overall Grand Champion Award will be given to the team that scores the most points overall. Other, overall awards or category specific awards, may be given.
7. The top three teams will be given an award from each category. One Overall Grand Champion will be chosen from all groups based on total overall score. For the Grand Champion Award, grade bands will be given a handicap. K-2 will get a +15 pt advantage, 3-5 will be given +10 pts, 6-8 will be given +5 points, 9-12 will not be given any extra points. Other awards may also be given.

General Rules:

1. Participants may not search the web or use the Internet in any way in order to obtain hints or tips during game day.
2. While in the competition area, all cell phones must be turned off. iPods, and MP3 players are not allowed to be used during the competition. In general, any disturbance that causes other contestants to lose their concentration will be addressed by the contest judges.
3. Participants may not use a wireless device to contact or talk to anyone during the contest period. **Interaction with teachers and family during the actual contest period is not allowed*.**
 - * Primary students (K-2) are allowed to have one adult to read/interpret game rules. They are not allowed to lead or coach the team while they are programming or problem solving. Also, They are allowed to have an adult in line with them when they are ready to compete.
 - Adults are allowed to observe, but not instruct.
4. Teams are allowed to bring the following to the contest:
 - a. - a total of three books. A "book" may consist of a personal collection of notes in a 1-inch binder or composition book (loose collection of papers is not permitted).
 - b. - a calculator (although most laptops should have a calculator as a general app)
 - c. - a measuring tape/stick (Teams are not allowed to measure the actual game field. A meter stick will be placed on the field for reference.)
 - d. A device to program their robot.
5. Any question should be submitted to a competition judge who will provide a response.
 - a. Questions must be submitted by students.
 - b. No questions will be taken from Parents, Teachers or any others not on the field.
 - c. Primary students may have a teacher/coach with them when they ask.
6. Each clarification question will be considered and acknowledged, but the judges reserve the right to not answer any question that may provide a competitive edge. The question and its answer may be provided to all contestants if it seems relevant.
7. During the contest, judges and volunteers are not permitted to help debug a team's program.
8. **The judges' decisions are final.**
9. In the event of a rule infraction, The following will occur:

- a. Warning
- b. Team will be given a 10 minute timeout. They cannot program or compete during this time.
- c. Team will be given a 30 minute time out.
- d. Team will be removed from the competition and will forfeit any points already earned.

Hardware-Software Requirements

1. Participants will bring their own robotics hardware to the contest. Robots should be pre-assembled at the time of the contest and be ready to compete. There will not be any additional time given to teams who do not have their robot constructed at the start of the contest. Any robotics platform is allowed. Batteries for each robot must be provided by the participants. A new set of batteries is suggested. Backup batteries may be brought to the competition and used as needed.
2. Each team's robot should fit within the dimensions of 13in x 13in x 13in. Please contact us if you have a robotics platform that cannot accommodate this requirement.
3. **Robots may not use grippers** or extend beyond the required dimension. All robots should be purely navigational robots. We suggest a very simple hardware configuration for the robots. (If your robot kit came with a gripper, it may remain, but you may not use it in competition, however, remove it if possible.)
4. Some obstacles will be simpler with the ability to detect shades of black and white or colors. A light sensor may be used for such obstacles. Additionally, a touch sensor may assist robots in moving through some obstacles.
5. All robots must be under autonomous control based on a downloaded program. **Robots may not be remote controlled by a human (or alien life-form) or tethered to a laptop.**
6. Participants must also bring their own computer to use during the competition (this allows us to accommodate a wide range of programming environments, and provides greater flexibility to the participants).
7. Each team may only use one computer at a time during the competition. However, teams may bring a configured back-up computer in case there are any hardware failures

during the contest. We will not provide any replacement computers in the event of a hardware/software malfunction.

8. An area will be provided for teams to program. Power will be available.
9. Participants may use the programming environment of their choice to produce their robot programs. The specific environment must already be installed on the participant's computer. We do not have the ability to manage the various environments that may be used and leave that responsibility to each team.
10. Teams may use multiple programming environments, if needed (e.g., if individual team members prefer to use different environments for different solutions across the various obstacles and challenges).
11. We are not able to accommodate any requests for extra time due to media failure of a hard drive, or lost programs. Teams are encouraged to backup their solutions frequently to multiple locations.
12. Wireless internet is available at the venue. However, we are not responsible for teams that are unable to connect to the internet if needed. Please be able to program your robot without internet connection. Teams are not allowed to use the internet to search for tips and hints during the event. Judges will be watching.
13. If using Bluetooth for programming your robot, it will be advantageous if your has the same name as your team. This will make locating your robot among the multitude simpler when trying to program.
14. Connecting to another team's robot and changing programming is punishable by immediate expulsion from the game and scores set to zero.
15. Teams using a robot that requires the programming device on the game field (ie Dash, Sphero) must surrender their device to the judge as soon as the robot starts.

Scorekeeping:

1. The contest will consist of several obstacle courses and challenges that the students must consider over a 3-hour period. This time period is exact. At the end of the 3 hour period, teams not already running the course will be asked to leave the competition floor. If your robot is on a course, running at the cut-off time, they can continue, until their time is up. They may not restart.
2. The set of obstacles will span various levels of difficulty.
3. The obstacle courses and project challenges will not be revealed until the beginning of the contest.

4. Teams may work on any problem in any order. It should be noted that a line may form for specific obstacle courses and challenges, such that the wait time to get onto the playing field is a factor that should be considered as a strategy.
 5. All attempts will be made to have two of each course available.
 6. Ranking will be based on the overall combined score from the individual challenges.
 7. Time will be used as a secondary scoring method in order to break potential ties. In the case where multiple contestants have the same score, the tie breaker will be the total time taken to solve the correct problems (i.e., the contestant solving the problems in the least amount of time will have the higher ranking). A third-level tie breaker will default to the flip of a coin :)
 8. Some obstacle courses or challenges may have penalty points assessed (e.g., knocking down or touching a forbidden obstacle). The overall score will be counted as the number of positive points minus the deducted penalty points.
 9. A team may try each obstacle and challenge multiple times, but must start at the back of the line for each new attempt. Only one team member may stand in line and be present during the obstacle run*.
 - a. *Primary teams (K-2) may also have one adult with the team member in line. They cannot offer any assistance.
 10. When multiple attempts are made for a specific obstacle course, the best score of all attempts will be used in computing the overall score. It is possible for teams to go back to their computers and modify their programs (and also their robots, as long as it remains in the required dimension) and make additional attempts at a specific obstacle course to improve their score.
 11. Each field will be no more than 3 meters square. (approximately 10 feet square)
 12. All measurements are in metric.
 13. The organizers may solicit comments and feedback from teachers and participants such that these rules may evolve up to the final week before the competition. The specific issue of scoring and judging are the most likely issues that may be modified based on feedback.
- *Fees are used to support the STEM Outreach programs. They can be used for, but not limited to, the following: Field materials, awards and prizes, staff travel, refreshments for judges, fees for rental of space and/or material needed for the program and any other

good and just cause not listed here. Fees not used for this specific program can be used for the same support for other STEM Outreach programs facilitated by the same office.