IEEE NIGERIA SECTION

2015 ROBOTICS COMPETITION RULES

1.0. THE COMPETITION

The IEEE Nigeria Section 2015 Robotics Competition encourages undergraduate students from Nigerian universities to develop an early interest in science, technology, and engineering. The competition aims to promote engineering design concepts and principles within a teamwork-based environment by challenging students in a fun and instructive approach.

The first edition was successfully hosted in 2012 and involved the development of robotic motor skills in actualizing the control and motion of robot arms by pneumatics. Four Universities; Federal University of Technology -Minna, Nnamdi Azikiwe University - Awka, LadojaAkintola University of technology - Ogbomosho and ObafemiAwolowo University – Ife, participated in the competition. University of Ife won that edition based on a points based system.

In this second edition, students will make up teams which will design and build robots that make use of **Arduino Mega Microprocessor boards** and sensors (ultrasonic and infrared) to compete in a full day event filled with exciting challenges. Students will have to document their designs in a report, a display, and a presentation to be delivered on the day of the event. Teams will be awarded points based on the Technical Component (report, display, and presentation) and their performance in Challenges.

2.0. LAWS OF ROBOTICS

The three laws of robotics are as follows:

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given to it by human beings, except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First and Second Laws.

3.0. PARTICIPATION RULES

As a participant of the IEEE Nigeria Section 2015 Robotics Competition, it is important to demonstrate respect to your teammates, your supervisor(s), the volunteers organizing the event, and to all other attendees of any section event. Our goal is to establish a fun, friendly competition within a safe environment where everyone can benefit and grow together as a community while maintaining professional conduct when attending any section event.

3.1. Team Registration

The IEEE Nigeria Section2015 Robotics Contest welcomes and encourages both new and experienced competitors alike to participate in our events.

A single registered IEEE Nigeria Section 2015 Robotics Contest team must obey the following:

1. Each group is expected to represent a student branch of a university in Nigeria and must indicate interest on or before the 28th of October 2015.
2. All participants must be undergraduate students of Nigerian universities.Teams may not include any non-undergraduate students. Teams may have no fewer than 2 members and no more than 3.
3. All registered team members must have a valid IEEE membership at the time of the competition
4. Teams/participants must get endorsement by their University/Department HOD

3.2. The Technical Component

The Technical Component of the competition is meant to document the design process of the teams based on their work leading up to the day of the competition. The Technical Component is made up of three individual parts: a report, a poster or PowerPoint Presentation display, and a presentation to be delivered on the day of the event. Also, there will be no time to work on the presentation or display on the day of the competition as they must be ready for the judges at the scheduled time on competition day. Please note that the technical component is essential in determining the winner for each event as it can change your final rank.

3.3. The Robot

The robot must be built and programmed on the competition day. Venue conditions will affect sensors so teams are encouraged to bring their laptops in order to adjust their programs and are given some practice time to calibrate their robots (light and sound sensors).

Microprocessors, sensors and other accessories will be given to contestants during the competition and the competition will take place in one day. The organizers of the competition may provide suggestions for projects, but robot designs have to be decided by teams. The following rules should be strictly observed:

1. Each team is allowed to enter only one robot per challenge.
2. Participants are expected to build the projects themselves
3. All robot designs must be original. No kits

3.4. Grading Scheme

One of the goals of the IEEE Robotics Competition is to emphasize all aspects of engineering:

a. The fun and creative building part and
b. The invaluable accomplishments that come along with producing detailed technical work.

Therefore, the overall Grading Scheme for all Challenges will be equally split:

1. 50% for Competition (Performance in challenge) especially innovative use of the components provided, and
2. 50% for the Technical Component
   a. Innovation (15%)
   b. Display (10%)
   c. Presentation (25%)

3.5. Awards

Awards will be presented to the 1st, 2nd, 3rd place teams of the competition. Participation certificates will be distributed for all participating students. Judges will also be on the lookout to present two Special Awards:

1. Spirit Award - Presented to the team that shows the best overall team spirit
2. Most Innovative Award - Presented to the team with the most innovative robot design

4.0 General Information

1. IEEE will not be responsible for Transportation of the participants to and from the venue
2. IEEE Nigeria *may provide* accommodation to the participants for 2 nights if we get early confirmation of participation.
3. Lunch or light refreshment <u>will be</u> provided for all participants
4. All participants are advised to study about application, use and programming of Arduino Microcontroller before the event
5. The competition kicks off exactly 9:00a.m. IEEE Time and ends by 13:00

5.0 Event time table

9:00	Introduction of all participants
9:20	First lecture begins
9:45	Second lecture begins
10:10	Materials are distributed and guidelines reviewed
10:30	Competition starts with practical sessions
12:00	Assessment of outcome
12:20	Short presentation by each participants
12:40	Decision, Announcement and Award of Prices
13:00	Competition closes

So make sure to showcase your enthusiasm and creativity!

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