

LAWRENCE TECHNOLOGICAL UNIVERSITY
ROBOFEST

Exhibition

Exhibition

Feria de Ciencias de la Robótica Inteligente e Interactiva aplicada a la comunidad

1. Descripción general de Exhibition

Objetivos de aprendizaje

- Aplicaciones de la ciencia a la vida diaria.
- Creatividad y resolución de problemas.
- Habilidades técnicas de la comunicación.
- Desarrollo de algoritmos autónomos.
- Lógica de programación informática
- Implementación de sensores
- Adaptación a las condiciones ambientales
- Trabajo en Equipo

Sinopsis

- Robofest Exhibition es una excelente manera para que los estudiantes muestren su imaginación, innovación y creatividad, en favor de la sociedad.
- Cada equipo tiene total libertad para crear proyectos de robótica interactivos e inteligentes, como robots para experimentos científicos y robots para aplicaciones prácticas.

2. Edades y tamaño del equipo

- Junior Division (9 -14 años)
- Senior Division (15 – 19 años)
- Tamaño del equipo: Maximo 5 miembros

CARACTERISTICAS GENERALES

Antes del día de la competencia, los equipos deben proporcionar:

- Breve descripción escrita del proyecto
- Enlace del video (subido al sistema de registro de Robofest)
- Código fuente antes de la competencia para revisión del juez. Los inspectores de código pueden recomendar puntos para la programación
- Se puede utilizar cualquier micro controlador y cualquier lenguaje de programación
- Algunos Ejemplos:

https://www.robofest.net/index.php/?option=com_content&view=article&id=36

Debido a que parte de los requerimientos de esta competencia es que la presentación sea en inglés toda regla y rubricas estarán en inglés para que sea mas fácil la transición a el proyecto internacional en caso de ser seleccionado

3. Project Requirements/Limitations (1/2)

- Antes del día de la competencia, los equipos deben proporcionar:
- Breve descripción escrita del proyecto
- Enlace del video (subido al sistema de registro de Robofest)
- Código fuente una semana antes de la competencia para revisión del juez. Los inspectores de código pueden recomendar puntos para la programación
- Los equipos deben traer todo el material necesario para su presentación en la Exhibición.
- Se puede utilizar cualquier material que sea seguro para los humanos.
- Se recomiendan encarecidamente las interacciones de robot a robot, así como de humano a robot.
- Se permiten controles remotos inalámbricos controlados por programa. Por ejemplo, un controlador EV3 controlado por humanos puede controlar otros robots EV3 si los estudiantes escriben el programa del controlador remoto.
- Se deben emplear sensores para garantizar que el robot interactúe con su entorno en lugar de simplemente calcularlo.

3. Project Requirements/Limitations (2/2)

- The demonstration space for each team is limited to a maximum of 64 square ft, including a 6ft or 8ft table that is provided by the host. Teams may choose to demonstrate robots/devices on the floor. Exceeding maximum space allowed may result in deduction of points
- Projects which have been entered in a previous competition category of any kind can be entered, but team must:
 - Add new features and/or significantly improve or change one or more features
 - Describe the addition/changes in the project description text area of the online team registration page
 - Inform Judges during the official presentation that their project is a “continued” form of a previous project
- Video requirements
 - Approximately 4 minutes, max 5 minutes
 - Includes the Team ID, Team Name and team member introduction
 - Video should be submitted one week prior to the competition
- Teams advancing to the Robofest World Championships must resubmit project information (updates on the Robofest registration system, video, and the source code) one week prior to competition for judge review. Code inspector(s) may recommend points for programming

4. Project Recommendations

- There is no official theme for this season
- It is requested that teams bring poster boards or other visuals to describe their projects
- In addition to submitting the required 4 minute video, Exhibition teams may set up a team website and/or publish a video clip on a video sharing site such as YouTube
 - Judges will use them to preview the team projects prior to the competition day
 - Teams should plan to bring a laptop to show their video and/or display their website during the competition
- Visit www.robofest.net and click on the Prior Years link to view Exhibition projects from previous years

5. Project Presentation

- Teams must present their Exhibition project to the group of Judges with a formal presentation at a time specified by the Site Host
- Teams will have a maximum of 4 minutes to explain and demonstrate their project to the Judges
- Teams are responsible for keeping track of their 4-minute time limit
- Exceeding the time limit may result in deduction of points
- Teams may also present & demonstrate their project to spectators throughout the event
- In addition to the formal presentation, Judges may visit the team exhibit/table individually to ask additional questions, evaluate robots, and inspect program code at any time within the Official Judging time blocks as noted in the event program

6. Exhibition Judging

- The judges will use the rubric that is posted on the “Exhibition” page at robofest.net
- In addition to the formal presentation, Judges will visit the team tables individually to ask additional questions, evaluate robots, and inspect program code at any time within the Official Judging time blocks, as noted in the program
- “Secret Judges” may visit teams throughout the day to ask questions, check displays and observe interactions with spectators. These judges will not identify their roles
- Age-appropriate math and science applications will be judged
 - Advanced level skills are fine to use, however, they may not necessarily result in the highest scores in the STEM learning category on the rubric

7. Code Submission Instructions

- Exhibition teams must submit their source code 1 week prior to the competition
- Judges will assess how well the code is designed, structured and commented
- Guidelines:
 - Pdf format (print programs or images can be pasted into google slides or Powerpoint, then saved as pdf)
 - Arrange code to help make it easy to understand
 - If needed, add comments to help explain
 - Highlight aspects of code that are important
 - 1 file per team
 - Include team number and team name in file name (ex: 2913-4_Xteam.pdf)

8. Judging Rubric

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Robofest Exhibition Judging Rubric

Division: ___ Jr. ___ Sr. Team Name: _____ Team ID: _____

Judge Name:

Brief project description:

5: Strongly Agree	excellent, outstanding, advanced, exemplary, or amazing
4: Agree	good, accomplished, or proficient
3: Neutral	average, intermediate level, or acceptable
2: Somewhat Disagree	attempted but needs work
1: Disagree	little attempted or needs lots of help

1 ~ 5

Judging Category	Sub Categories	Weight	Score
1. STEM learning	This project truly demonstrates applications of science, engineering, and math.	8%	
	Students have an age appropriate understanding of the science, engineering and math concepts they applied.	8%	
2. Project idea and originality	The project idea is very original and showed impressive creative thinking and problem solving skills.	10%	
3. Project demo performance (robot)	The official live robot demo during the webinar is free from problems and very impressive.	10%	
4. Project presentation	Project presentation is clear, well organized, and delivered effectively within the allowed time.	8%	
	Information on the team poster, brochure and signage is clear, well designed, and able to be understood even by robotic novices. Project is within allowed size parameters (max 64 ft ² or 5.95 m ² including table).	4%	
5. Solution design	The solution design is creative, effective, user-friendly, and sturdy.	10%	
6. Project complexity	The project is complex with multiple features/functions, sensors, and components.	8%	


7. Practicality	The project shows potential as a useful and practical application of robotics technology.	8%	
8. Programming	Students able to explain their programming code during live presentation.	4%	
	Programs are well designed, structured, and commented (code document must be submitted to Robofest*).	10%	
9. Team independence	Based on my observations and interaction with the team, I believe the project was mostly designed, developed, and programmed by students, not by adult coaches, parents, or mentors. The students were able to clearly and confidently explain each part of their project.	5%	
10. Video	The video gives a clear explanation of features of the project, includes the Team ID, Team Name and Team member introduction (min 4 minutes/max 5 minutes).	7%	

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9. Online Format Team Setup

- Each team must be ready to demo & run robots alone at **one** location
- Each team must have a means for video conferencing (camera & microphone). We will assign **one** login for each Exhibition Style team location
- Multiple teams at one location are not recommended. Audio echo problem if multiple speakers are used
- Coach must print team sign and print and complete the pre-event checklist in advance of event day (See sample on next slide)
- Teams will present in the order determined by the site host

10. Online Pre-Event Checklist Example



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Exhibition Coach Pre-Event Checklist

Coach is required to PRINT THIS CHECKLIST and check off each item before logging in to the Event Platform on event day. During event Check-in, be prepared to show this sheet to Site Host.

Prior to Event: (check each item with a heavy mark so it is visible on camera):

- Upload Presentation Video link to Team Registration Page
- Send Code document to Site Host through Google Forms
- Register for Event Platform (i.e. Zoom) with the Registration Link send by Site Host
- Prepare Platform device (Laptop, Tablet or Phone)
 - stable internet connection
 - battery fully charged
 - camera accessible
 - Set up for initial presentation and can be moved to watch presentation and demonstration
 - microphone/speakers (test volume, mute/unmute)
- Print Team Sign (File Operations Menu on Coach Home Page) and have it ready to show
- Confirm Consent Form (online or hard copy) completed for each participant
- Attend the Pre-Meeting if scheduled

Event Day - Prior to Event Check-in:

- Inspect project for any illegal Materials: Any material that is safe for humans can be used
- Confirm that project meets space requirements (max 64 sq ft including table)
- Assemble Team to prepare for Event Check-in

I _____ verify that I have completed each item on this checklist