

15th Annual Robofest[®] 2014 Rules

2-6-14 v2.1 Official Version



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Attachments:

Forms:

- Consent, Release and Media Authorization Form:
<http://www.robofest.net/ConsentReleaseForm.pdf>
- Age Division Waiver Request Form
<http://www.robofest.net/2014/ageWaiverForm14.pdf> (Fillable PDF, digital signature)
<http://www.robofest.net/2014/ageWaiverForm14.docx>
- Video Qualifier Submission Form
<http://www.robofest.net/2014/RobofestVideoSubForm14.pdf> (Fillable PDF, digital signature)
<http://www.robofest.net/2014/RobofestVideoSubForm14.docx>

Rules for each competition Category:

- Game Competition (Avoid Meltdown) Rules
- Exhibition Competition Rules
- Vision Centric Challenge (VCC) Rules
- BottleSumo Rules
- BottleZone Rules
- Unknown Mission Challenge (UMC) Rules

These rules may be revised or refined during the season. Coaches are required to check the website and/or read emails about the possible changes.

0 Introduction and Competition Summary

Robofest® is an annual robotics competition designed to promote and support STEM (Science, Technology, Engineering, and Math) and Computer Science education through autonomous robotics. Robofest is an open competition, allowing teams to use any type of robotics platform in general and any programming language for the categories shown in Table 1.

Competition Category	Age (grade) Divisions	Team Size	Platform	Unknown factor	Assessment	Reg. fee(*2)	Note
Game: "Avoid Meltdown"	Jr. (5-8 th) & Sr. (9-12 th)	Max. 7	Any	Yes(*1)	Yes	\$50	Each team uses a fully autonomous robot to play this year's game, Avoid Meltdown.
Exhibition	Jr. & Sr.	Max. 7	Any	No	Yes	\$50	Each team has complete freedom to show off any creative autonomous robotics project.

(*1) Problems or parameters unveiled on the day of competition

(*2) Per team. No refunds will be given; some qualifying sites may charge \$20 ~ \$25 Check-in fee; Sites outside North America may have different fee schedules.

Table 1. Robofest 2014 Main Competition Categories

Robofest also provides the following associate competitions that will be held during the World Championship (WC). World Championship 2014 will be held in Southfield, MI at Lawrence Tech University, May 16-17, 2014. Detailed information can be found in Section 14.

Competition Category	Age Divisions	Team Size	Platform	Unknown factor	Reg. fee per team	Note
Vision Centric Challenge (VCC)	Sr. (9-12 th)	Max. 3	Any vision-based robot	Partially unknown	\$50	For talented high school and college students. Competitions will be held World Championship
	College	Max. 2	Any vision-based robot	Partially unknown	\$50	
BottleSumo	Jr.	Max. 3	Any	Partially unknown	\$50	World Championship
BottleZone	Sr.	Max. 2	Any	Partially unknown	\$50	World Championship
Unknown Mission Challenge (UMC)	Jr. & Sr.	Max. 3	Lego NXT	100%	\$50	World Championship

Table 2. Robofest 2014 Associate Competition Categories

See attached separate document for each Competition Category rules.

1 General Team Rules

A. Team Formation

- Any organization, such as a school, home school, civic organization, club, etc. can form teams.
- Age divisions and grade levels for each competition category are indicated in the tables 1 and 2. Grade levels denote the student's grade as of April 2014.
- For any exceptions in a student's age or grade, the coach must submit an "Age Division Waiver Request Form" to Robofest administration for approval. The general rule is that playing up from Jr. to Sr. Division is fine as long as the student has exceptional talent in construction of the robot *and* computer programming, and has the maturity to work with other team members. Playing down is discouraged in

general. The reason to request playing down must be specified on the form. For either playing up or playing down, coaches should obtain consent from their entire team and their parents.

4. A team member may join multiple teams *in other competitions, not the same category*. For example, a student can join a game team and an exhibition team. When a coach has multiple game teams, a student can join only one game team. Any exception of this rule must be approved by Robofest administration.

B. Team Registration

1. Teams are registered by a registered coach; a coach may have multiple teams using same coach ID #.
2. Team registration is processed on the web at <http://www.robofest.net>. See section 3 "Registration Process" for a detailed description of the registration steps.
3. The registration deadline is **3 weeks** before the competition date at each site. If a competition category at a site does not have 5 teams or more, teams registered at the site *may* be asked to move to another site; or teams can enter via video submission. (See Section 8)
4. There may be a \$20 ~ \$25 check-in fee at a qualifying competition site, which will be used solely by the competition host site. Each qualifying site web page specifies the fee amount under the "check-in fee" section.

2 Team Coach Rules

A. Coach Qualifications and Roles

1. Coaches must be adults without any criminal record.
2. The coach must have a valid email address and must check the email account regularly. Email is the primary and official communication method between the team and the Robofest organizer. If a coach's email address is changed, it is the coach's responsibility to update the Robofest registration system by logging into the coach's Robofest account. To confirm an email address change, the system will send the coach a confirmation email. The coach will need to confirm by clicking on a link in the confirmation email.
3. Robofest 2014 has multiple qualifying competition sites. A coach using a single coach ID may register different teams for multiple qualifying sites.
4. The coach is responsible for entering and updating team information by the update deadline **10** days before the competition. Note that team members' personalized certificates will be printed based on the information the coach enters on the website. Robofest will not reprint certificates for free due to incorrectly entered information.
5. Team coaches must coordinate pre- and post-assessments online to help Robofest administration gather data regarding students' learning of STEM subjects.

B. Coaching Teams

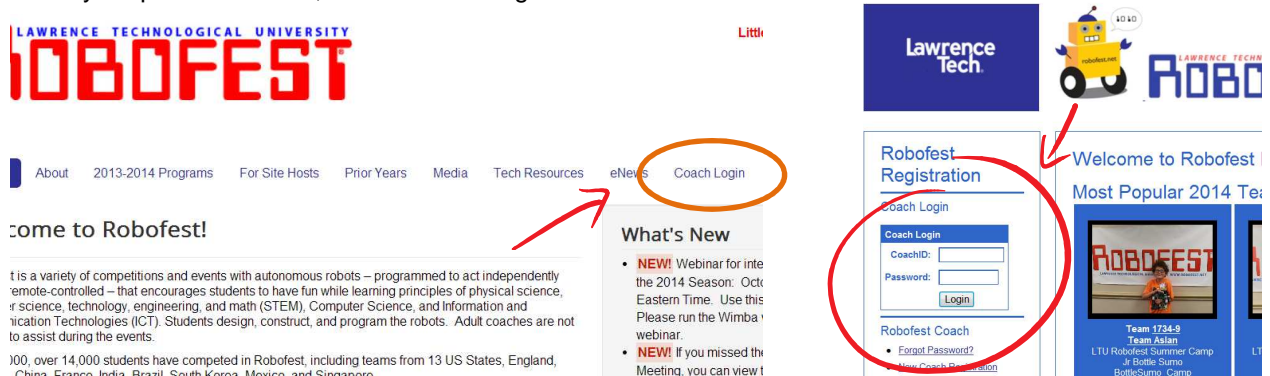
1. Coaches and adult volunteers must not directly work on their team's robot(s). They should teach and/or provide necessary training for the team to solve the challenge problems by themselves.
2. We recommend that coaches recruit technical mentors or assistant coaches if necessary. Coaches are encouraged to contact local IEEE (Institute of Electrical and Electronics Engineers) chapters (Robofest medal sponsor), ACM (Association for Computing Machinery) chapters, engineers' societies, robotics clubs, tech companies, or universities to find volunteer technical mentors.
3. Robofest provides some technical workshops at LTU and/or online. There are books, multimedia curriculum, and other online resources available as well.
4. The team coach is responsible for facilitating, transporting, and overseeing team members for team meetings and at Robofest competitions.

C. Sponsorships / Consent & Media Release Form

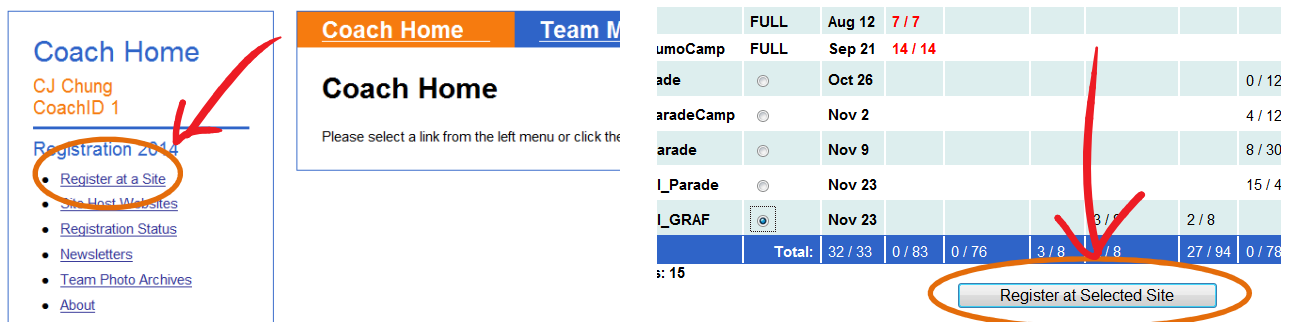
1. Another important role of the coach is to find sponsors for their team(s). Team sponsors are individuals, groups, companies or other organizations that donate cash, products, or in-kind services to the team. The Robofest website will list up to four team sponsors per team on the web.
2. Robofest attracts media attention. Coaches must collect *Consent & Release Forms* not only for students, but also for the coach him/herself and team volunteers. These paper forms must be submitted by a coach to the hosting site during check-in. Note that the form requires parent signature.
3. Before and after Robofest, please contact newspapers, radio, and TV stations to recognize your teams' efforts and achievements. Let Robofest administration (robofest@LTU.edu) know if your teams were featured in any media outlets.

3 Registration Process – Six Steps (See Figure 1 for summary)

Step 1. **Coach Registration** form can be found on the web at www.robofest.net. After the registration form is submitted, a coach ID and password will immediately be sent to the coach by email from *do-not-reply@robofest.net*. COACH REGISTRATION IS CONFIRMED BY CLICKING A LINK IN THE EMAIL CONFIRMATION SENT TO YOU. If you do not receive the confirmation email, contact robofestoffice@gmail.com or 248-204-3568 to resolve the problem. An incorrect email address in the coach registration form may be the cause. Please check your spam folder before contacting us. Veteran Robofest (2003 ~ 2013) coaches are encouraged to use their prior coach ID and password. If you forgot your password or ID, click on the "Forgot Password" link.



Step 2. **Team Registration** will begin in November 2013. Using the coach ID and password, the coach can create teams after selecting a qualifying site. During this step, the coach must accept the Robofest 2014 Coach's Pledge (Section 15).

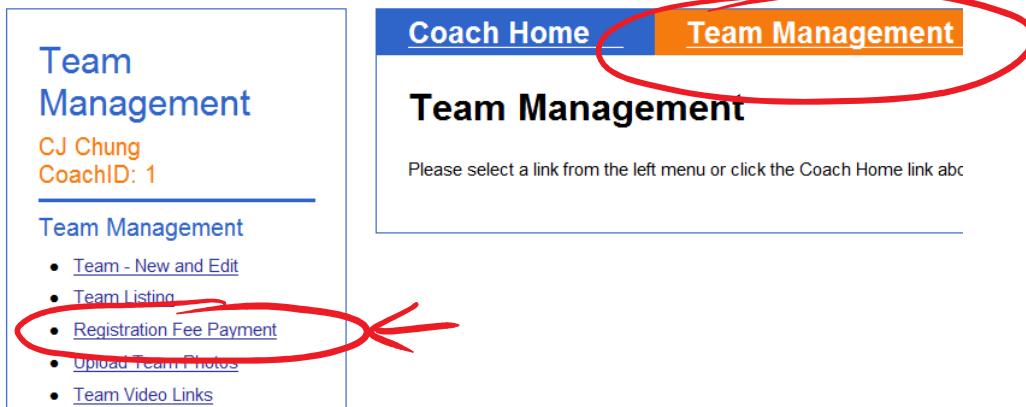


All the team member names, grades, and gender must be entered. Student contact information is not made public. Exhibition teams must enter a short project description in this step including the theme of the exhibition, functionalities of the robots, and any other information that describes the exhibition. Please register early, since a competition division of a site will be closed when the number of teams registered is equal to the maximum capacity for the division.

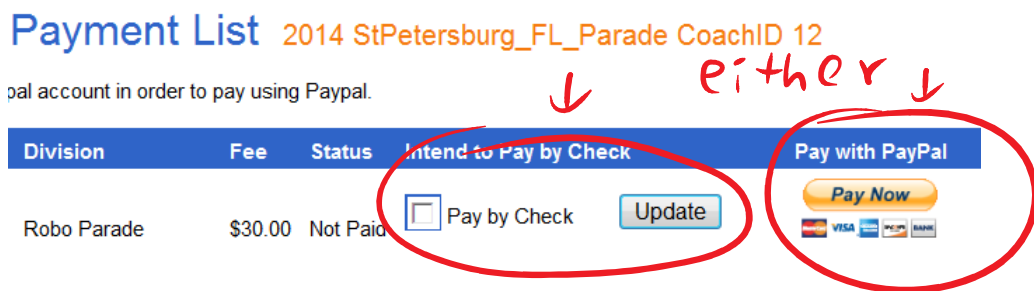


Submission button at the bottom!

Step 3. **Registration Fee Payment:** After creating all of your teams, pay the registration fee online using a major credit card through PayPal. A PayPal account is NOT required.



You will receive a payment confirmation email from PayPal, which can be used as a receipt. Or, you may choose the option to send a check payable to LTU Robofest to: **LTU Robofest, 21000 West 10 Mile Rd., Southfield, MI 48075, USA**. Make sure to **WRITE THE TEAM NUMBER(S) IN THE MEMO LINE OF THE CHECK AND INCLUDE A HARD COPY OF THE PAYMENT PAGE FROM THE WEB WHEN YOU MAIL THE CHECK**. Your team registration will be complete once LTU receives the check.



Step 4. **Consent & Release Form:** Print the Consent & Release form and send it to students' parents. Get the signed forms from parents.

Step 5. **Team Photo Uploading:** Take a team photo and upload it to the coach account on the web. Steps are: Logon to your coach account. Click on "Team Management" tab. "Upload team photos" link on the left menu bar. Select the site and team.

The requirements for the photos are: (1) standard **landscape picture** file such as jpg, gif or tif (width: height ratio should be 4:3 or 16:9) (2) smaller file size is recommended (3) must show all the team members listed (4) adult coach and volunteers may be in the picture (5) must show the identifiable team ID and team name (write down or print the number on a paper and hold it when taking the photo **or** edit the photo file to add text). The team ID number is decided in **Step 2** above. The photo must be uploaded within **3** weeks after the team registration **and** 10 days before the qualifying date. **If no photo is uploaded before the deadline, certificates for the team will not have a team photo**. There will be special prizes for Best Team Photos. Please upload the team photo as early as possible, since the uploading date is one of the selection criteria for the award.

Step 6. **Robot Photo Uploading (Optional) & Final Update:** Take a photo showing your team robot(s), if your team wants. Upload the photo using the coach's web account **10 days before** your qualifying competition date. The robot photo requirements are the same as in (1), (2), and (5) in **Step 5** above. At this step, coaches must be sure to update any team information including team video links on the web. Best team videos will be selected during World Championship. The final update deadline will be **10** days before the competition date for each qualifying site. This is a hard deadline, as time is needed to print and ship all the participant certificates to each site.

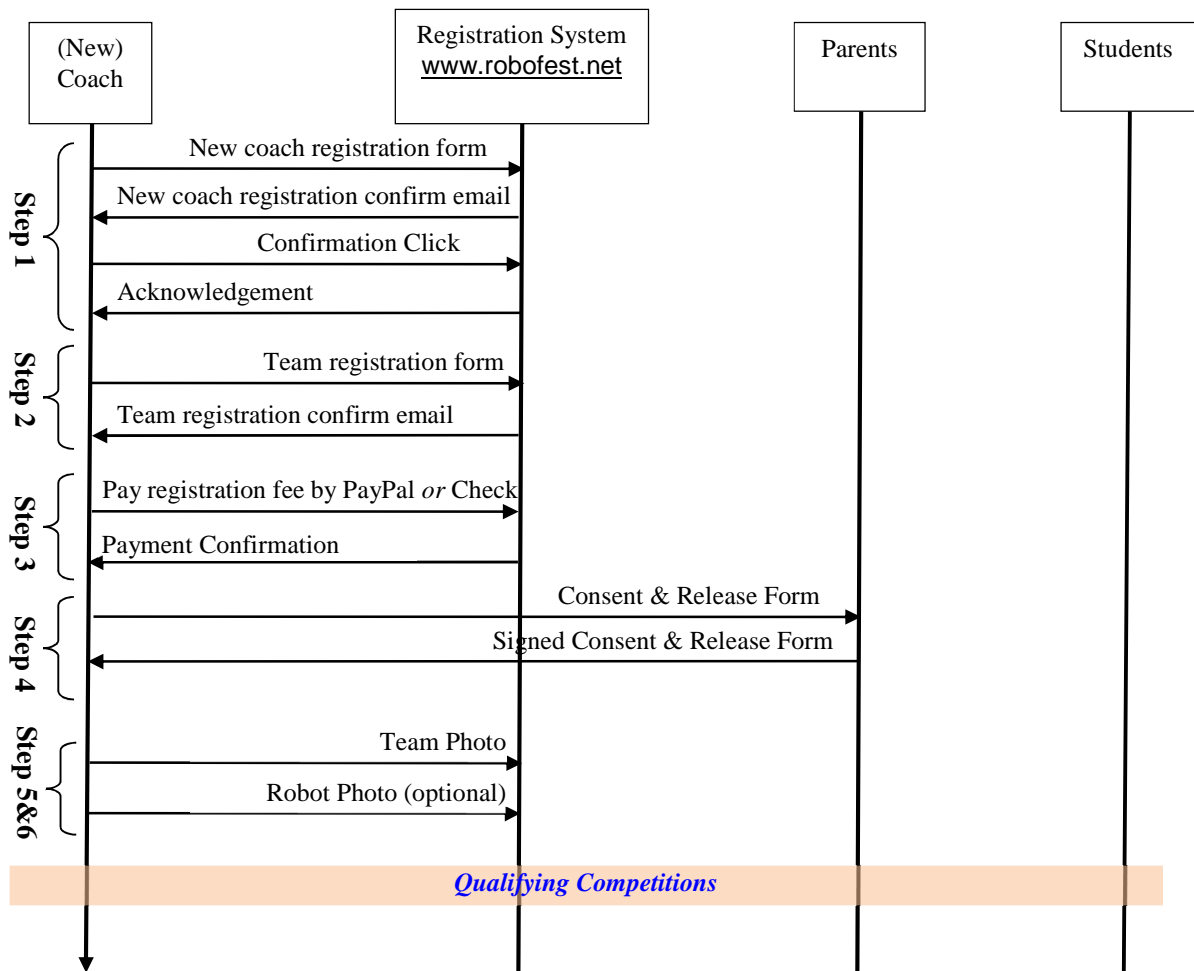


Figure 1. Team Registration Procedure Summary

4 Team Volunteers

The team cannot work without the help of various volunteers for technical mentoring, financial sponsorship, transportation, constructing playing fields, preparing food, taking pictures, videotaping, etc. The Robofest website will list up to five volunteers per team. LTU/Robofest has become a Certifying Organization for the President’s Volunteer Service Award, or PVSA (www.presidentialserviceawards.gov). All Robofest team and site volunteers are encouraged to track service hours. To register, please contact Robofest Coordinator, Faith Kurily at fkurily@LTU.edu.

5 Common Sense Rules for Education

Construction of the robot body as well as all programming for the student competition should be done solely by the students. Parents, teachers, mentors, or coaches may not directly assemble the robots or directly write the program code for the team at any time during the preparation period or during the competition. Any direct participation is a violation of the rules. The offending team will become ineligible for any awards.

Only team members with name badges will be allowed in the pit (team table) area during the competition. **No adults are allowed in the pit area for all competition categories.** If a team coach must enter the area, they must receive permission from one of the judging proctors. It is strongly suggested, for security purposes, that the coach have assistants watch the team table area, especially when the team is competing. The use of wireless communication by students in the pit area is prohibited.

6 Robofest Assessments

For the Robofest 2014 season, we will continue to assess the impact of robotics competitions in STEM education. The purpose of the assessment is to quantify and analyze students' interest in STEM subjects and improvements in STEM skills through Robofest. Competitions can drive students to work harder resulting in improved skills. We believe that students participating in robotics competitions will hone STEM skills and demonstrate skills they would not have gained outside of the competitions. To prove this, we need measurable data to quantify the students' experiences. We can use this data to highlight successes and determine areas of improvement. They will be assessed before and after the competition to see the level of improvement. Another group of students who did not participate in the competition will act as a control group and take the same pre- and post- assessments.

Pre-assessment instruction will be sent, tentatively in January, to coaches registered at a site. Coaches will receive post-assessment instruction in early April. This assessment is anonymous and results may be published in a journal on education research.

7 Team's Responsibilities on Robofest Competition Day

- All teams must observe the check-in time set by the site host organizer.
- Things to bring to the Robofest venue:
 - Robot(s) and spare parts
 - A laptop or other computer for each team to solve unknown factors or adjust to the lighting conditions. It is **not** recommended that teams share computers.
 - *Exhibition teams*: poster boards to introduce the exhibition including a description and all the necessary materials for the exhibition
 - A power strip and power cable
 - Extra batteries or charger
 - Signed Consent & Media Release forms for team members, coach, and team volunteers – *required*.
 - Check-in fee, if your qualifying site charges a check-in fee. Check out your site home page.
- Teams must use the team table assigned by the organizer. Please do not change team tables. If you change, judges and the organizer *will not be able to find your team*.
- General Rules During the Robofest Competition:
 - No food or drink is allowed inside the competition area.
 - Flash photography is not allowed inside the competition area.
 - Do not make unnecessary noise which might disturb other teams in the pit area. Be respectful of all teams.

8 Rules for Video Submission Entry for Qualifying

If there is no qualifying site near the team location (or under special circumstances) the teams may register on-line for Video Submission. There will be two separate categories – one for International, and one for US. Video Qualifier teams are required to pay the same registration fee. We will ship medals and certificates to teams.

Trophies will also be shipped to winning teams. The following are the suggested video contents:

- Start with the team ID/name and team member introduction, around 5 seconds for each member.
- Introduce features of the robots, around 5 seconds for each robot.
- Demonstrate Game or Exhibition. The video should not be edited once the demo has started. See Game rules as well as the submission form for details about how to prepare the video.
- 2 minute question and answer session. Questions can be made by the coach.
- Rolling credit and/or acknowledgement (recommended).

Adults may help produce the video. If students were involved in the video production work, it should be acknowledged in the credits. The coach must submit a signed *Robofest Video Submission Form* when sending the video. Preferred submission method is to send a video sharing site link as well as the submission form **by email** to Robofest@LTU.edu. A DVD may be sent to:

**LTU Robofest
21000 West 10 Mile Rd.
Southfield, MI 48075, USA.**

All the video submissions must be **received, not postmarked**, by the deadline, Fri. April 11, 2014, noon EDT.

9 Warm-up Competition

Warm up competition will be open to only registered teams and registered judges. It will not be open to the general public.

10 Judging and Prizes

Approximately 20% of the total number of teams at each Official Qualifying Competition site will win trophies to be presented during the award ceremony. Detailed judging rules are explained in each category's rules. Every registered team member will receive a certificate of achievement and a *personalized* medal during the award ceremony of the Qualifying Competition. All teams must stay for the closing ceremony.

11 Special Competition: Team Photo and Team Video Contest

The best team photos will be selected from the uploaded team photos. Every team is automatically entered once the team photo is uploaded. Selection criteria include team spirit, unity, harmony and uniqueness. In addition, we are checking if the number of students in the photo is the same as the number of students in the system. A deduction might be made if the team photo was uploaded more than **3 weeks** after the team was registered.

We are introducing a new Team Video Contest. Any team video link entered on the team coach account is automatically entered to the contest. The video length should be less than 10 minutes.

12 Michigan Championship

Winning teams from MI qualifying competitions will be invited to the Michigan Championship at Lawrence Technological University on May 3, 2014. The total number of teams advancing from each qualifying site/competition division will be decided in proportion to the number of teams registered at the site in each division.

13 US (Non-MI) Video Screening

Teams from Non-Michigan Qualifying competitions will advance to World Championships based on a Video Screening for Exhibition teams and Game Score for Game teams. Winning Exhibition teams must submit a video of their robot exhibition by April 18, 2014 by emailing video link to robofest@ltu.edu. Game teams do not need to submit anything, as their scores will be automatically sent by qualifying site host.

14 World Championship

Top Game and Exhibition teams from MI Championships, International Qualifiers, and Video Screening advance to compete in the World Robofest Championship at Lawrence Technological University May 17, 2014. The total number of teams advancing from each qualifying site/competition division will be decided in proportion to the number of teams registered at the site in each division.

As part of World Championship there will be Open Competition categories on May 16, 2014. These are open to any team and registration will be taken on a first come, first served basis.



Figure 2. World Championship Advancement Structure

15 Robofest Scholarships

Team members of the top Senior Division teams at the World Robofest Championship in Game, Exhibition, and VCC will receive \$2,000 LTU annual renewable scholarships, only if they become LTU students. Any Robofest participants may apply for a LTU annual renewable scholarship. Please contact Dr. Chung at chung@LTU.edu for details.

16 Reordering Certificates and Trophies

Robofest is pleased to provide certificate re-printing services for a minimum charge. Also, winning teams can order multiple trophies or certificates of award with individual names on a fee basis through the Robofest office.

17 Robofest 2014 Coach's Pledge

As a Robofest coach, I have read and agree to abide by the Robofest 2014 rules (<http://www.robofest.net/2014/robofest14rules.pdf>) as they exist now and as may be set forth or amended during the Robofest season.

As a coach, I am responsible for communicating and enforcing the Robofest rules to team members, team volunteers, and others affiliated with my team.

I understand that any rule updates, guidelines, additional information, and announcements will be communicated to me primarily via emails and web updates. I am responsible for reading the information and I will relay it to all the people affiliated with my team. If there are any changes in my email account, I will notify Robofest administrators and update my coach profile.

*As a Robofest Coach, I understand that the students come first. Robofest is about students learning S.T.E.M. Everything my team does starts and ends with the principle: **the students do all of the work**. My team members will do the designing, building, and programming of the robot. Adults may help them find the answers, but cannot give them the answers or make the decisions in detail.*

*Acceptance of this pledge signifies my intent to uphold and maintain the Robofest spirit. **This will be signed when coaches register teams on-line.***

18 Example Qualifying Competition Schedule

(Assumption: eight Jr. Game, six Sr. Game, and five Exhibition teams; plus **three** official Game playing fields. There is no official lunch time, but a food concession stand may be open.)

8:00am	Doors Open and Check-In begins. Find your team table after check-in. Both practice and official playing fields are open for practice. Setup Exhibitions.
9:00am	Opening Ceremonies <ul style="list-style-type: none"> • National Anthem • Opening Remarks • Introduction of Judges • Explanation of key Robofest competition rules
9:20 – 9:30am	Unveiling Unknown Factors (1) for the Game teams (No adult allowed in the pit from this point on)
9:30 – 10:00am	Official presentation and demonstration of Exhibitions (6 min x 5 = 30 min) Game teams work on unknown factors.
10:00am – Noon	Exhibition and silent judges will visit Exhibition team tables for interviews
10:00 – 10:05am	Game Robot Impounding
10:05 – 10:40am	Round 1 Jr/Sr Game competition begins on three Game playing fields in parallel. Teams compete in a pre-determined order set by the site host. Two or three teams will be timed and judged at the same time. Each round will be 7 minutes on average in length, which includes: <ul style="list-style-type: none"> • Move-in (2 min), • Team introductions (max 1 min), • Play (2 min), and • Move-out and return robot to impound area (2 min). With 14 Game teams, there will be five Round 1 competitions for a time of 5 x 7 = 35 minutes; 10 minute break.
10:45am	Unveiling Unknown Factors (2)
11:15 – 11:20am	Game Robot Impounding
11:20 – 11:45am	Round 2 Game competition begins in the order determined by the site host. There will be no team introductions, 5 x 5 = 25 minutes.
11:45am – Noon	Break. Judges tabulate final scores.
Noon	<ul style="list-style-type: none"> • Recognition of Coaches, Teams, and Team Members: Coaches will award Medals and Certificates of Achievement to students • Take a group photo with all coaches and team members. The group photo must be submitted to Robofest office for the official 2014 video. Playing music is recommended at this time.
12:15pm	Awards and Closing Ceremony: Judges should line up and congratulate winning teams. See the illustration below. Announce the teams that will advance to Regionals.
12:25pm	Recognition of Volunteers Volunteer Group Photo / Cleanup

