



2020 Awards and Judging Logistics

Music City BEST

The purpose of this addendum is to supplement the BEST Competition Rules with hub specific judging requirements for Music City BEST Competition.

Section 1 Competition Format and Deliverables

Music City BEST has selected the following competition format for 2020.

Outbreak Classroom

Music City BEST is hosting a new Classroom event in 2020 which will consist team's demonstrating their robot's performance through a series of time trials on a classroom field. Time trials will be accomplished via one or more scheduled online video meeting(s). All other activities will be accomplished online.

Teams will be provided with robotics kits at Kickoff. Kickoff will be hosted as an online event, with kit distribution happening the same day at Lipscomb University's Fields Engineering Building. If you were not able to pick up the kit on that day, contact Keller Sheperd at khshepherd@mail.lipscomb.edu or call (615)521-9743 to arrange alternate plans.

Each team will be provided with a field kit at Kickoff time. The team must construct the field in a location of their choice (e.g., classroom or other sizable location). The classroom field is ~ 10.5 ft x 10.5 ft.

Robot compliance will occur prior to teams starting their timed trials. The current plan is to have a half hour session with each team to run through the Robot Compliance, check the field setup and the location of a fixed camera to show the referees the game action.

The robot performance competition will be conducted as virtual time trials where each team will run and be scored on 8 time trials sequentially. It is expected that each team will take about 2 hours to complete their competition matches. Each team is allowed 20 minutes in pit stop time to make adjustments on their robots. This time can be used either all at once or split into 2 ten-minute pit stops. The pit stops can be taken when the team determines they need a pit stop. Pit stops do not have to be taken, if the team determines they do not need them. At the end of a time trial, the driver can tell the referees that they want to take a pit stop before the field gets reset and they will need to indicate if they are taking a 10 or 20 minute time slot. During this stop, the team may mute their audio on the competition video session and move out of the camera view to work on the robot. Please make sure someone remains in contact with the referees at all times. During the pit stop, referees will be monitoring the time and will work with the trusted agent to reset the field. The next driver and spotter must immediately move back into their positions with the robot ready at the end of the pit stop time.

In order to run virtual trial sets with all 10 teams on Game Day, there will be two game sessions running at the same time (i.e. two referee and scorekeeper groups). We will be livestreaming both of these game sessions.

The total average score from these time trials will be used to assess the team's robot performance points. The lowest time trial score will be dropped.

Teams will take part in the following activities during the competition:

- Robot Performance – on the classroom field at the scheduled time(s)

- New Robot Critical Design Review
- Engineering Notebook
- Virtual Team Exhibit and Interview
- Marketing Presentation
- BESTMania Skills Quiz (optional)
- Outbreak Minecraft Challenge (optional)
- Video Design Challenge (optional)
- Website Design Challenge (optional)

Contingency Plans

Given the unprecedented times during this pandemic, the Music City BEST hub team has come up with a contingency plan if the majority of the teams are not able hold classroom competitions. If this situation occurs before 10/24, the Robot Performance portion of the competition will be transitioned to an online competition format where the students create a virtual robot. The other activities will proceed as originally planned on the dates indicated. We truly hope that this contingency plan not needed.

The virtual robot and field mimic the game field described in the 2020 BEST Competition Rules. The team is challenged to program the robot for driver-controlled and autonomous game operations and demonstrate those skills on the virtual field.

The robot performance time trials will be conducted as described in the classroom competition section. Each team will run and be scored on 5 driver-controlled time trials and 3 autonomous time trials. The total average score from the driver-controlled time trials will be used to assess the team's robot performance points.

The total score from the autonomous time trials will be used to determine the winners of the Autonomous Programming Challenge.

For driver-controlled and autonomous, the lowest time trial score will be dropped.

Teams will take part in the following activities during the competition:

- Driver-Controlled Robot Performance – on the virtual field at the scheduled time(s)
- Autonomous Programming Challenge - on the virtual field at the scheduled time(s)
- New Robot Critical Design Review
- Engineering Notebook
- Virtual Team Exhibit and Interview
- Marketing Presentation
- BESTMania Skills Quiz
- Outbreak Minecraft Challenge (optional)
- Video Design Challenge (optional)
- Website Design Challenge (optional)

Competition Awards

All judging will be accomplished online for all activities and all competitions.

The awards that will be distributed for teams competing in Music City BEST competition are:

- BEST Award, 1st – 3rd place
- Robot Performance (time trials), 1st – 3rd place
- BEST Critical Design Review
- Founder’s Award for Creative Design
- BESTMania Skills Quiz Award
- Minecraft Challenge Award
- BEST Video Design Award
- BEST Website Design Award
- Autonomous Programming Challenge Award, 1st place (only if contingency plan enacted)

Section 2 Additional Awards

In addition to the Standard Required Hub Level Awards outlined in the BEST Competition Rules document, the following awards will be given at the Music City BEST competition:

- Lipscomb University Award for Robotic Engineering Excellence
 - Recognizes excellence in engineering design and construction of the robot
- BEST Category Awards
 - Best Project Notebook
 - Best Marketing Presentation
 - Best Team Exhibit & Interviews
 - Best Spirit & Sportsmanship
- People Awards
 - Teacher of the Year
 - Mentor of the Year

Note: This year, we ask that team members work together to submit one team nominated entry for Teacher of the Year and Mentor of the Year (2 separate awards).

Section 3 Demographics and Post Season Survey

The required Student Demographics and Post-Season Survey must be completed by all students on the team roster before the Robot Compliance Check will be considered complete. Teams that do not complete Robot Compliance Check are subject to disqualification.

Parents/Guardians help students complete their demographic information in the student profile and complete the post-season survey when it becomes available. This information can only be completed through the parent/guardian account on the BEST National Registry.

My Students				
You are parent/guardian for these students.				
STUDENT	SCHOOL NAME	TEAM #	POST SEASON SURVEY	STUDENT LOGIN
<div style="display: flex; align-items: center;"> <div style="border: 1px solid gray; padding: 2px; margin-right: 5px;"> Edit Profile Post Season Survey Manage Student Login </div> <div> Young, Halei </div> </div>	Bogus High School	499	Not Completed	Yes

The teacher will submit a copy of their team roster from the BEST National Registry as a pdf file within the Registry Deliverable section before noon on 11/13. Preferred format is .pdf, but use format the data is provided by the registry download.

STUDENT	GENDER	PREVIOUS PARTICIPANT	GRADE LEVEL	PERMISSION	POST SEASON SURVEY	ATTENDING GAMEDAY	WORKFLOW ACCESS
Young, Halei	F	Yes	12TH	✓	x	<input type="checkbox"/>	Full Access

NOTE: It is the responsibility of the teacher to make sure that every student on the roster completes the Post Season Survey before the deadline.

Section 4 Team Pre-requisites

All teams participating in the 2020 Music City BEST competition will need to meet the following pre-requisites.

1. Must have a computer with internet access.
2. Ability to create documents in PDF format.
3. Ability to participate in online meetings.
4. The hub will determine and communicate which online meeting platform(s) are to be used and any software that must be installed on the student/team computer or mobile device providing the video camera source.

Equipment needed for specific competitions:

1. *Marketing Presentation* – computer or mobile device with camera; minimum 1 camera with full team view (if students are physically co-located) or 1 camera per participant (when students are not co-located). Applicable online meeting software/app.
2. *Time Trials (Outbreak Classroom Competition)* – computer or mobile devices with internet access and appropriate online meeting software/app, 2 webcams (1 fixed, 1 mobile). Cameras can be external or integrated into the device (laptop, tablet, phone); 1 camera per device. Recommend wired power for the fixed computer/camera.

3. *Time Trials (Outbreak Online Competition – contingency plan)* – computer with internet access and appropriate online meeting software/app, Chrome browser (if using Google Meet). Webcams are not required beyond online meeting interaction.
4. *Time Trials (Outbreak Online Competition – contingency plan)* - Windows, Mac or Unix computer meeting minimum MathWorks system requirements. We recommend at least 25GB of free disk space. See Outbreak Online Competition - Programming Challenge details.

Section 5 BEST Award Logistics

5.1 Hub vs. Championship Judging

Because hubs operate with a variety of resources, specific requirements of the BEST Award will vary between hubs. This document contains specific requirements set forth by your local hub for the BEST Award competition. Should your team advance to the Regional Championship and participate in the BEST Award, be aware that all categories are judged at the championships and your team will be expected to participate in all. There may be some minor differences in notebook, marketing presentation, team exhibit, and interview procedures and guidelines at the championship, as well as other optional/ additional awards.

The BEST Award will be judged using the following scenario:

Scenario 1:

Judged Components	Point Value
Engineering Notebook	30 points
Marketing Presentation	25 points
Team Exhibit and Interviews	20 points
Robot Performance	15 points

Total 90 points

5.2 Engineering Notebook (30 points)

- The Engineering Notebook should be uploaded no later than Tuesday, November 9, 2020 by 4 pm. The Engineering Notebook should be submitted as an electronic PDF file through the BEST National Registry Team Workflow page.

5.3 Marketing Presentation (25 points)

- Each team will sign up for a presentation time slot. The available time slots will be indicated on the BEST National Registry Team Workflow page. All presentations will be performed as a scheduled online meeting using Zoom. The team will provide video, audio and share any presentation material during the online meeting.

5.4 Team Exhibit and Judges' Interview (20 points)

- The virtual team exhibit will be created and managed by the team via the BEST National Registry Team Workflow page.
- The virtual team exhibit must be complete by the date/time indicated in the Team Workflow deliverables. Judging will commence after this time. Further updates may not be considered.
- Each team will sign up for a judges' interview time slot. The available time slots will be indicated on the BEST National Registry Team Workflow page. All interviews will be performed as a scheduled online meeting using Zoom. The team will provide audio and video during the meeting.
- The judges may interview the participating team members on details within their virtual exhibit or other team topics.

Section 6 Applying for the Simulink Design Award

To apply for the award, teams are required to submit their Simulink model and a link to a short video describing their program design using Simulink. Teams will submit their entries by completing a form at the following location:

http://www.bestrobotics.org/simulink_award/form.php

PASSCODE = 1mmun3!

The entries must be submitted before 11 PM (local time) December 5, 2020 for all regions.

Information that teams need to provide when submitting their entry:

- Name of School
- BEST Hub (know which hub you belong to)
- Team Contact
- Team Contact Email Address (*important: all entries are tied to this email address*)
- # Students on the Team
- Simulink Model File (.slx file)
- Link to YouTube Video (3 min. maximum)
- Brief Description (256 chars) of how the team used Simulink to program their robot