Unknown Mission Challenge

Mission tasks will be totally unknown until the day of competition. Robots are built and programmed at the competition.

V 1.0 –Final Version for 2021 season.

02-06-2021

This file can be found under the **Get Involved→Unknown Mission Challenge (UMC)** Page on the website
Coaches are responsible for communicating rules updates to participants

www.robofest.net   robofest@ltu.edu   248-204-3568

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1. UMC Overview

Learning Objectives

- Autonomous navigation
- Critical thinking
- Computer programming logic
- Use of sensors
- Adjusting to environmental conditions
- Problem solving
- Learning on the fly
- Design and construction of robots

Synopsis

- An Open Category competition, which will take place at the World Robofest Championship
- There are no qualifying competitions for this challenge
- Mission tasks will be totally unknown until the day of competition
- The goal of this challenge is to provide an opportunity to develop problem-solving skills on the fly without any help from adult coaches

2. UMC Age Divisions and Team Size

- Two Age Divisions
  - Junior Division (Grades 5-8)
  - Senior Division (Grades 9-12)

- Team Size: Maximum four (4) members per team for Jr. Division and both Sr. Division

- Team Registration Fee: $20

- Related important document – Robofest 2021 General Rules at robofest.net

- Each team member, as well as the coach, must bring the signed Robofest Consent and Release Form on the day of the event, if not completed on-line

3. Robot Requirements

- Teams may only use one of the following approved robot platforms, and must bring their own robot parts
    - LEGO NXT sensors, motors, parts, and one NXT controller
    - LEGO EV3 sensors, motors, parts, and one EV3 controller
    - Vex IQ sensors, motors, parts, and one Vex IQ controller
    - Lego Spike Prime/Robot Inventor
- No limit to part quantities, except for the limit of one controller
- Pre-assembled robots cannot be used
- All robot components must be unassembled at the beginning of the competition
- Sensor or motor multiplexers are not allowed
- Any programming language is allowed and team must bring their own computer to program the robot
- No internet or cell phone use allowed

4. How to Manage, Judge, & Decide Winners for UMC

- Jr and Sr competitions will have different missions

- Maximum 4 team members (increased from 3)

- Team ID sign needed

- Team & robot intro time before unveiling challenges for special awards decided by Robofest office staff

- Need to check playing field setup before the official runs

- Each location must have **location judges** to proctor & prevent unauthorized activities. See next slides

- No impounding robots needed. We run all at the same time for each round

- Translators are allowed where needed

5. Competition Procedures

- Only participants are allowed in the work area, team tables, and game fields throughout the competition day

- The Unknown Mission Challenge is unveiled at the start of the event. No adult help is allowed after the unveiling

- Teams will have "official" runs that will be judged

- Winners will be decided based on the scoring of their individual runs

- The exact method of determining final scores will be unveiled at competition

6. Qualification & Roles of Location Judges for UMC

- Location Judges (LJ) must complete and sign the Pre-Event Checklist, show it during check-in and submit with the official scores
- LJ must sign a pledge document and recite the pledge during the opening ceremony
- LJ needs to be a person who does not have any direct relation to the team and approved by the National Director
- LJ must attend Online training
- LJs are to proctor & prevent unauthorized activities
- LJ will score each round and submit the official scores
- LJs are responsible for capturing a video of each run for score verification, uploading it to a video sharing platform and sending the link to Robofest
- The video must show our identifiable screen & sound in the beginning & the end for us to verify whether the video was taken during the official time
- The videos must be uploaded and links must be sent within 1 hour of the end of the competition

7. Pre-Event Checklist

Note that some checklist items may be confidential and should not be shown to teams prior to the event

ROBOFEST   UMC

Unknown Mission Challenge (UMC)
Location Head Judge (LHJ) Pre-Event Checklist

LHJ* is required to PRINT THIS CHECKLIST and check off each item before logging in on event day. During Check-in, show this completed and signed sheet to LTU Staff.

*You must be registered as a Judge for the Event and and ZOOM via the Google Form link

Prior to Event: (check each item with a heavy mark so it is visible on camera):
- ☐ Read and understand 2021 UMC rules
- ☐ Print test sheets (to be emailed after registration confirmed)
- ☐ Complete test according to instructions on test sheet
- ☐ Prepare other materials:
  - ❑ clear or light colored tape
  - ❑ measuring Tape or measuring stick
  - ❑ pencil/pen
  - ❑ clipboard (optional)
  - ❑ tripod (optional)
- ☐ Prepare competition area (72 cm x 80 cm (minimum) consistently colored area - such as Hard Floor, Robofest Table, Table top, or Foam Board)
- ☐ Prepare Zoom device (Laptop, Tablet or Phone)
  - ❑ stable internet connection
  - ❑ battery fully charged
  - ❑ camera accessible
  - ❑ set up so camera positioned as shown with the competition area in the foreground and team pit area is visible in the background, and space for team to stand between for intro
  - ❑ microphone/speakers (test volume, mute/unmute)
- ☐ Prepare Video & audio recording device
  - ❑ battery fully charged
  - ❑ enough memory storage

Event Day - Prior to Zoom Check-in:
- ☐ Confirm Recording Judge has the recording device with battery memory storage
- ☐ Confirm Coach has printed team sign and has it ready to show
- ☐ Confirm Coach has received Consent Form (online or hard copy) for each participant
- ☐ Confirm team has an unassembled Robot Kit conforming to the Rules (p3)
- ☐ Inspect Robot Kit for any illegal Materials
- ☐ Assemble Judges and Team to prepare for Zoom Check-in

I _____ verify that I have completed each item on this checklist (send an image of this form to esantos@ltu.edu with the completed scoresheets).

01/25/2021

This form will be shared with LHJ's during the week of the competition

8. Tentative Schedule for UMC

1. Online check-in for Location Head Judges. Microphone and camera will be tested for each team location. Pre-event checklist will be verified as complete. (30 min)
2. Opening (13 min)
   a. LTU remarks by video
   b. Judge's oath, Introduction of Location Judges and rules
   c. Announcements such as team intro order
   d. Contestant pledge
3. Team introduction (1 min / team) for Team Spirit awards (1.5x30 = 45 min)
4. Unveiling Unknown mission (5 min) Jr and Sr competitions will have (totally) different challenges
5. Checking Playing Field Setup for each team during **1 hr 50** min Worktime
6. 1st Run after checking robot dimensions (5 min)
7. 2nd Run after checking robot dimensions without a break (5 min)
8. Closing (2 min)   [Total: 3 hr 35 min]