2019 Transportation Academy
Agenda - June 10-14

THE UNIVERSITY OF MEMPHIS
Southeast Transportation Workforce Center

Monday

9:00-9:20 Program registration, Intro surveys

9:20-9:50: Introductions, Intro presentation (Smart Cities.pptx)

Welcome students to the program, introduce staff, have students introduce themselves, give overview of program and do Smart Cities presentation. Put students in groups of 2

9:50-10:10 Team Building Activity

Snowball Fight

This is a very oldie, but goodie. To play, students basically write on a piece of paper 2 or 3 interesting facts about themselves that they'd like to share. Tell them not to write their name on the paper! Then, they wad up the paper into a "snow" ball. I like to have all of the students toss their snowballs toward the center of the room (I have an empty space there) on the count of three, and then everyone goes and picks up a snowball. Students take turns reading aloud picked up snow balls and either they or the class as a whole tries to guess who wrote each.

10:10-10:35: Teams meet and decide on:

- ***Company Name***
- ***Company Motto/Mission Statement***
- ***Company Logo***

10:35 – 11:05: Human Robot

Writing instructions: Write instructions for a "Human" robot to build a K'Nex structure. One person from each group is selected to be the robot. The other members of the group are shown a K'Nex structure and asked to write detailed instructions with a limited vocabulary. Score is based on how well the robot is able to duplicate the structure. Groups are then able to trade words in their vocabulary and to repeat the assignment again scoring based on how well the structure is duplicated. Penalty points are given if either the team or the robot violate the instruction written for the robot. 50 points total. 25 for each trial.Hand out kits to the teams. Have them open and place the parts in the boxes.

11:05-12:30 UKIT Challenge #1

First Program: Download the UBTECH app from either the App Store or the Google Play store. Students will build a modified version of the Golf club model for the challenge. Each team will be required to putt a ping-pong ball into a cup (circle) from distances of 6", 12", 18", and 24" within a five-minute time period. The ball must stop within the 2" diameter circle to be considered a goal. The 6" circle scores 1 point, the 12" circle scores 2 points, the 18" circle scores 3 points, and the 24" circle scores 4 points. The team may modify the program between tries. Until a team has scored in each circle, they may not repeat any circle. 50 total points are based on the most points scored (ranked). Teams may modify their robots for the second part of the challenge. The same distances are available with the addition of a 30" and 36" distances. The 30" distance is worth 6 points and the 36" distance is worth 8 points. Stopping in the circle is the same. Teams will again have five minutes to maximize their points. The first four distances much be accomplished before a team can select any repeat or new distances. Again, 50 total points are available and based on a ranked finish. **This activity uses UBTECH Ukit - Intermediate.

12:20-12:50 Lunch

1:00 - Restroom break/board bus

1:30 – 3:00 Field Trip

3:00-3:30 Return to U of M

3:30-4:00 Technical Presentations presentation (TechnicalPresentations.pptx)
Presentations (student teams present UKIT Challenge)

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Tuesday

9:00-12:00 FedEx Freight Day!

9 15 – 9:35 Miranda Harbor and McKenzie Brower, FedEx Freight Communications Team

Quick background intros for Miranda and McKenzie, then a little about FXF communications, then an exercise with the students about how to introduce themselves and come up with their intro talking points.

10 am ***United States Army Command Sgt. Major, Marvin Hill.***

11 am ***Devon Alexander, Talent Acquisition for FedEx Freight***

11:30 am ***Erika Conley, Diversity and Inclusion for FedEx Freight***

12:00-12:45 Lunch and Learn: Calvin Abram , Planning Supervisor, Region 4 Office of Community Transportation

12:45-1:45 UKIT Challenge #2:

Second Program: The students will build the Remote-Control Forklift from the Intermediate set of instructions. Teams will program their robot to carry a golf ball 8' along the putting green and deposit the ball in the cup. Any time a Forklift drops the ball, the team will be required to start over at a distance 2' shorter along the track. They will receive reduced points for their score. A minimum distance of 2' will limit the track. The teams must determine a way to maneuver the robot and to unload the ball within a five-minute period or operation. In the first part of the challenge, they may control the robot by remote control. The second part of the challenge allows the teams to modify their robot in any way they choose as long as the golf ball is carried and not pushed along the course. The teams are also required to program the robot rather than remote control. Same goals and penalties for the challenges. 100 points for each challenge scaled based on distance successfully accomplished

1:45-2:00 Walk to FIT 440 – Ernest McCracken

2:00-3:00 Virtual Reality Lab Demo/discussion

3:15-4:00 Snack, Prepare/present presentations on design challenge and dismissal

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Wednesday

9:00-9:20 Connected Vehicles Intro Presentation

9:20-9:30 Transportation Engineering Discussion

9:30-10:30 Leadership Session – ToNaya Gulley

10:30-10:45 Connected Vehicle Video and Discussion

10:45-11:00 Introduction to Sphero and Lab activity Part 1

Connected Vehicles Demonstration (Sphero)
http://nanosonic.com/wp-content/uploads/2017/07/Module-2_Connected-Vehicles_Lesson-1_Connected-Vehicles-Demonstration_Lesson-Plan_HS.pdf

12:00-1:00 Lunch & Learn (Speakers)

12:00-1:00 Sphero Mission Activity https://edu.sphero.com/remixes
Students choose one activity to do with their Sphero, then present to the group

1:00-3:00 Lab Activity Part 2 Collision Avoidance and 3 Maze Navigation

3:00-3:30 Speaker and snack

3:30-4:00 Prepare presentations based on Analysis Questions in Lab Guide

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Thursday

9:00-10:00 Leadership Session – ToNaya Gulley

10:00-12:00 Challenge Project Introduction and Teams begin work.

12:00-12:30 Lunch

12:30 – Board bus for Field trip

1:00-3:00 Field Trip

3:00-3:30 Return to U of M

3:30 – 4:00 Snack and Work on Projects.

Friday

9:00-9:30 Exit Surveys, Group picture, thank-you note

9:30-10:00 Projects

10:00-10:30 Isaiah Surbrook – preparing for college

10:30 – 11:30 Projects

11:30-12:00 Lunch

12:00 – 1:30 Transportation Jeopardy and Prizes

1:30-2:45 Final presentation preparation

2:45-4:00 Final Project Presentations –Showcase for parents – ET 302

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