Updated : Wednesday, 9/13/2012

2012 Robotics Competition at Fox Valley Technical College

FAQ

We noted that different materials would be used for different events.

There was a problem with the first published sheets. It will be changed to: Latex painted white ¼" birch underlayment for the first 2 events and Latex painted white sanded side of an interior grade plywood for the last 2 events.

What is the track surface for each event?

On page 5, each event description indicates a white painted plywood surface. On page 6 the description says ¼" pressboard. Page 7 also says pressboard. Pages 8 and 9 says plywood. Which is it? Or might the surface vary by event? Also, please define pressboard. Some is rough like OSB and some is quite smooth like pressed sawdust.

Line tracking: ¼" birch underlayment painted white with latex paint. Pull test: ¼" birch underlayment painted white using latex paint. Hill Climb and Wall Climb: ¾" Interior grade sanded plywood painted white with latex paint.

The ¼ "pressboard is a 5 layer very smooth birch underlayment. The paint I am using for all boards is white satin finish interior grade paint. Needless to say all surfaces will be the same paint and will be smooth. I am rolling the paint on with a sponge roller.

Can we change batteries between events or have time to recharge?

No. There is only one lap in the first event so one battery should be more than enough to complete the series. If your bot flat out completely exhausts the first battery, we will let you finish the events with another, but please come with batteries that are fully charged.

Define digital instrumentation on the pull test; will we be pulling against a spring, a dead weight, or something else?

You will be pulling against a strain gauge coupled with twine (I may have a short spring in series in order to prevent shock to the load cell). There is no give once the string is tight. The test will be won on traction against a nonmoving object.

What will be the height of the pull string above the pulling surface? Three to four inches.

Define "one program". Does the bot have to sense which event it is competing in automatically or can we use a 4 position selector switch or 4 separate pushbuttons to initiate the specific code for each event?
Just one program for all events. One program , one mechanical configuration and one switch (2 positions reset and run - operator initiated) with the exception of a safety device so the grappling hook does not accidently launch itself. The bots should not run into any obstacle with the exception of the wall on the last event. The bot can have other sensing switches as needed.

Define "points of contact". Could a robot have two separate drive systems one on the top and one on the bottom. There would only be 4 points of contact at any one time, but the robot could be inverted depending on the event.

A point of contact is a drive wheel, idler wheel, something dragging behind the bot, or any other place where the bot touches the drive surface (track). You can have other drive systems like on the top and then flip the bot to use the alternate drive system if you want to. Points of contact are defined as contact between the bot and the track. If a continuous track like a tank is used, all drive wheels and idler wheels are counted as points of contact – not the track itself.

Can you better define the angles that we will be working with on the triangular portion of the precision line follower event. Even in a "no more than" "no less than" degree angle form?
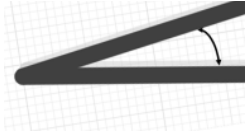
We will construct the track as close as possible to the given layout. We will grid the surface and transfer the pattern to it. We will blow up the angles of the triangle so it's one to one and then use that for a guide. Worst case angle is 15 degrees.

For the precision line follower does the bot have to follow the line all the way to the very tip of the triangle or as long as it follows the triangular path are we ok?

The bot's line sensor must enter the intersection (inside) portion where the tapes meet (to form the angle).

Could tires be "spiked" to provide more traction?

The tires as they are must not be drilled or permanently changed. You may put something that is removable over the tire that contains traction devices. You must show the judges that they are removable and did not destroy the original tire. Good question.

Is there a time limit on the wall climb or is it based totally on distance?

15 minutes. Thanks for asking this.

Can a robot shed weight or leave parts of itself behind for the wall climb event?

No, the robot must finish with everything it started with (except some battery power).

Is the 2" cube size limit on the grappling hook refer to the diameter only or the length of the shaft also?

Everything including the shaft. We will put the hook into the cube and close the cover to test it.

Could the grappling hook itself be spring loaded such that it would fit in the 2" cube but expand once it was outside the cube?

Yes, the hook on the end of the line must fit into the cube. We will allow a compressible spring as long as it fits into the cube when it's compressed. The cube will be made out of ¼" Plexiglas. You cannot break the cube trying to collapse the spring.

If a robot runs duals(wheels) on an axle, as long as they are mounted so that they are touching each other, would they count as a single point of contact or 2 points of contact?

If the wheels were together and could not turn independently, we will consider this a single point of contact as to prevent the time to manufacture a single wide wheel. Thanks for this question.

Will there be a spectator area available and will there be food available onsite?

We will have plenty of space for spectators. We will furnish pizza for all directly involved (teams, advisors, instructors). Spectators however will have to travel about 1 mile to some food places. It's just too hard to determine the food requirements for spectators. Sorry.