APPENDIX F

College Challenge

Introduction

After last year's success, we are thrilled to continue the exciting VEX Robotics Competition College Challenge for another year. There are so many colleges and universities which already use the VEX Robotics Design System in their academic programs it is only natural that they have a place to pit their skills against each other in some friendly competition. Just like last season, there will be a battle royale at the VEX Robotics World Championships. Not only does everyone get to see which school has what it takes to be a Champion, but the schools participating get the chance to show their stuff in front of thousands of future engineers and really demonstrate what makes their school remarkable.

Event Information

Several of the University partners participating in the VRC College Challenge will be holding tournament events in addition to the capstone competition at the 2010 VEX Robotics World Championships. For more information on College Challenge events refer to http://robotevents.com/college which will have event details, pricing, and registration info.

Game, Robot, and Tournament Rules

The VEX Robotics Competition College Challenge uses the VEX Clean Sweep game with very little modification. No changes were made to the field. Anyone that already has a Clean Sweep field can use it for the VRC College Challenge.

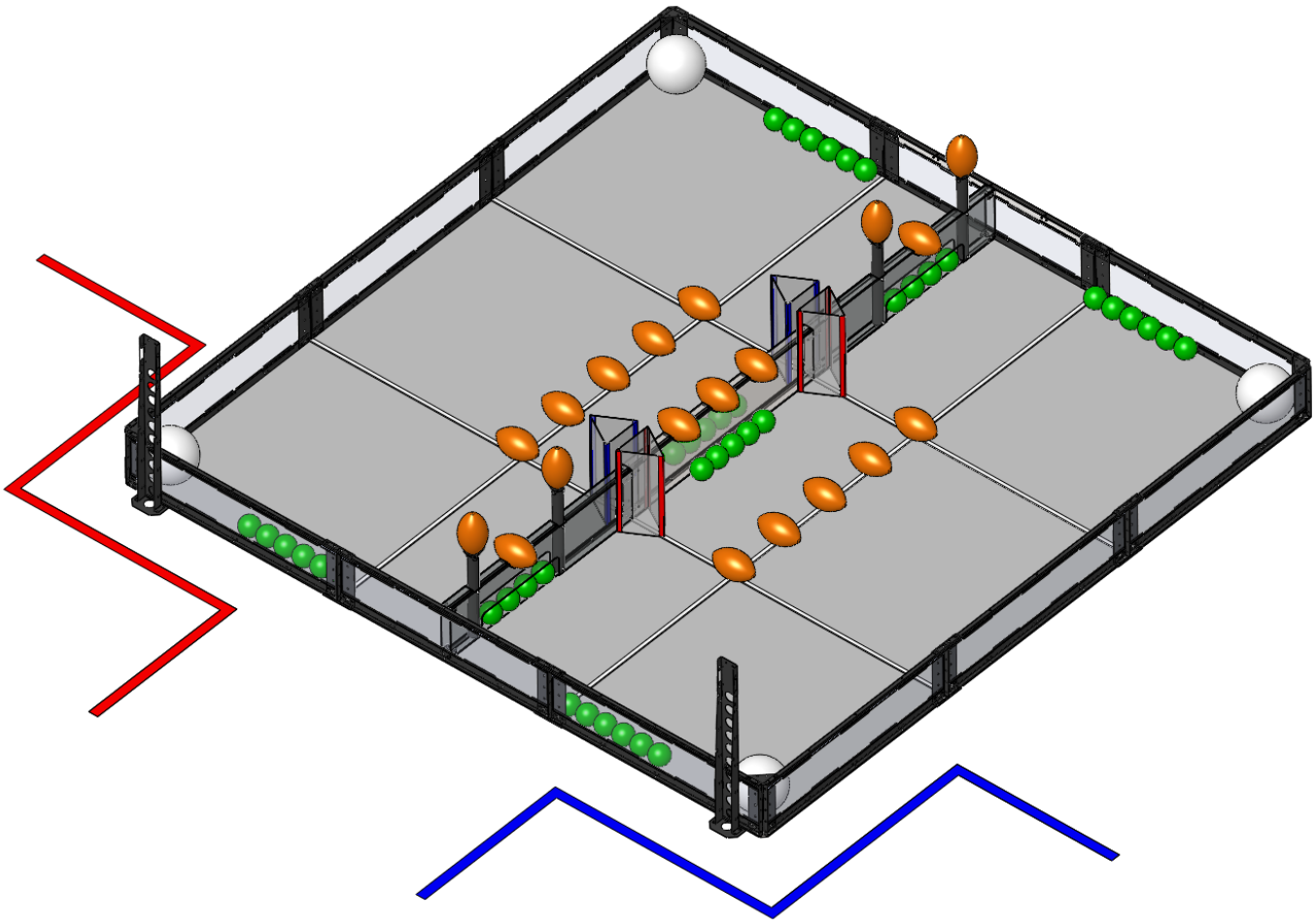
Please consult the VEX Clean Sweep Game Manual for the foundation set of competition details. All the same Game, Robot, & Tournament rules apply except for the modifications listed in this document. In the event of a rules conflict the rules listed in this document and rulings on the College Challenge Q&A take precedence.

Game and Tournament Rule Modifications:

1. Instead of a 2-team vs. 2-team format, the VRC College Challenge will be played 1-team vs. 1-team, with a twist: each team will use TWO robots in each match. This means every team gets to build their own partner!
    a. Teams are allowed to build as many robots as they would like, but only TWO (2) may be used on the field during a match. They may only bring two (2) robots from the pit to the playing field for any match.
    b. All robots must pass inspection (see Appendix D) before they are allowed to compete.
2. Qualification matches will be conducted like normal, in the 1 v 1 format described above.
3. An elimination tournament will be conducted similar to the Middle School & High School tournament. At the end of the competition, ONE team will emerge as the event champion.
4. The autonomous period at the beginning of every match will be lengthened to 60-seconds.
5. The operator control period will be shortened to 80-seconds and will still immediately follow autonomous.
6. At the end of the autonomous period, the team that has the most total points receives a fifteen (15) point bonus.

Game, Robot, and Tournament Rules cont.

7. Four (4) Large Balls will start the match “in play”.
    a. These balls will be positioned in the four corners of the field, as shown in the figure below.
    b. Teams will NOT have the option of introducing an additional large ball into play.
    c. The position of these large balls IS taken into account when determining which team is ahead at the end of the autonomous period, and will affect who is awarded the 15 point autonomous bonus.



8. If at any point during the two-minute twenty second (2:20) match all the balls still in play (not already in a goal) end up on one side of the field, the match immediately ends, and the match will be scored at that time.

Game, Robot, and Tournament Rules cont.

Robot Rule Modifications:

1. The maximum allowable starting size for a robot is 18" x 18" x 24".
    a. Robots may place the 24" dimension in any orientation at the start of the match.
2. Teams are allowed to fabricate their own unique VEX parts from the following additional items, for each of their robots:
    a. One (1) piece of plastic block 6" x 6" x 1"
        i. Examples of "plastic block" are PVC, Delrin, and ABS
    b. One (1) sheet of Polycarbonate (also known by trade-names such as Lexan) no larger than 12" x 24" and no thicker than 1/16".
    c. One (1) sheet of Steel OR Aluminum no larger than 12" x 12" and no thicker than 1/16".

Note: these are not measured by "volume". Teams are restricted as though the components they are constructing were made from the raw materials listed.

3. Each Robot is allowed to utilize up to one (1) VEX Microcontroller (choose one of the following):
    a. Teams using a VEX-EDR V.5 Microcontroller can use up to (10) motors.
        i. Note, the VEXnet Upgrade is required.
    b. Teams using a VEX-EDR CORTEX Microcontroller can use up to (12) motors.
    c. Teams using a VEX-PRO ARM9 Microcontroller can use up to (16) motors.
4. Each Robot must use one (1) VEXnet module.
5. Each Robot is still only allowed up to two (2) operators and one (1) coach.
    a. Drivers MUST be post-secondary school *students*.
        i. Any student enrolled in a post-secondary school is eligible to be a driver.
        ii. There are no restrictions on who can be a Coach in the VRC College Challenge.
        iii. Professionals not enrolled in post-secondary education are also NOT eligible to be a driver. (This is the "College Challenge").
6. There is NO restriction on sensors and additional electronics used for sensing and processing except as follows:
    a. Sensors and Electronics MUST be connected to the VEX Microcontroller via Analog/Digital Port or Interrupt Port. They cannot directly interface with the VEX Motors.
    b. The additional Sensors and Electronics may only receive power from any of the following:
        i. Directly from the VEX Microcontroller via Analog/Digital Port or Interrupt Port.
        ii. From an additional VEX 7.2V Robot Battery or from a VEX 9.6V Transmitter Battery (only one (1) additional battery can be used for sensor power.)
    c. Additional Motors, Servos and Actuators are NOT allowed.

Team Composition

We want to see Colleges and Universities from around the world register for the VRC College Challenge to face off in head-to-head competition. While colleges are not limited to one team and while a team can consist of students from multiple colleges we hope that each team is identified with and proudly represents one (1) post-secondary institution. (i.e. "Clarkson University" vs. "UC Santa Barbara"). Of course, college level club teams and mixed composition teams are also encouraged to participate!

Rule Clarifications

For any rule clarifications or questions please use the official Q&A at www.vexforum.com