APPENDIX F

College Challenge

Introduction

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 along with regional tournaments across the world. 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 2011 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

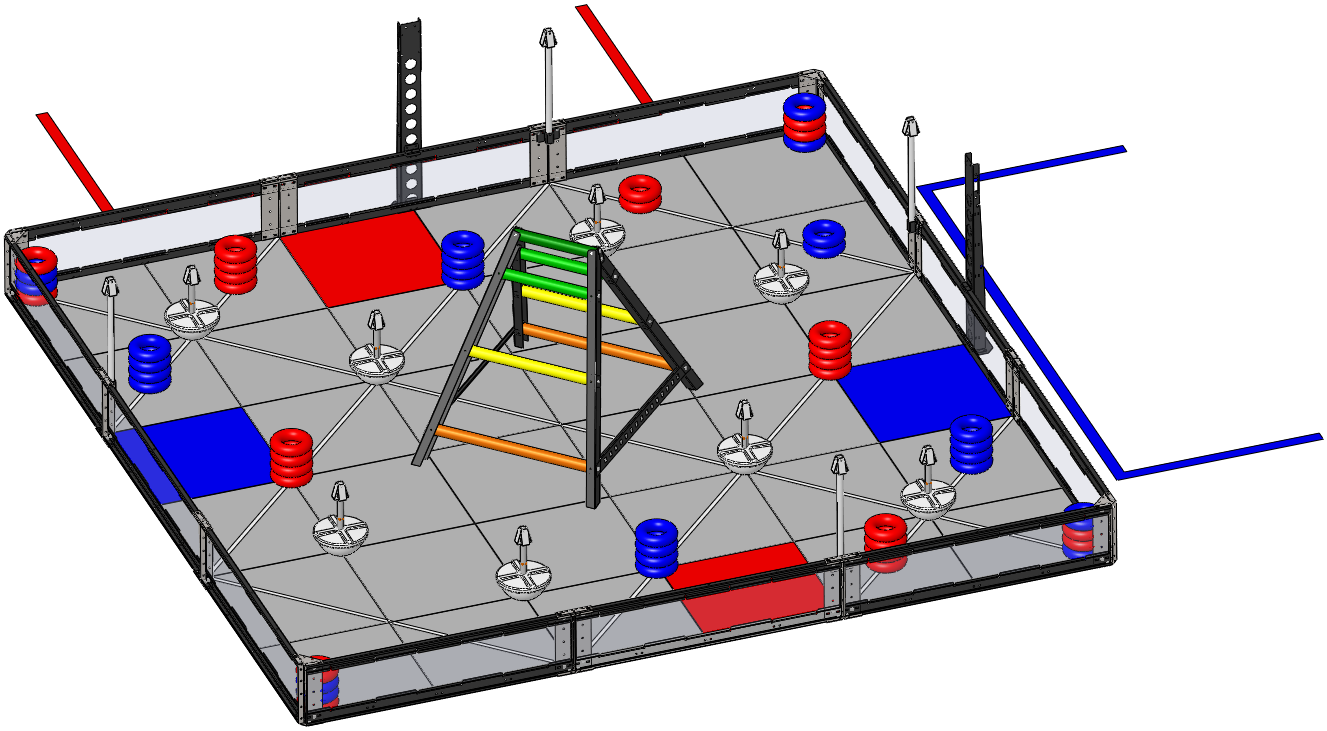
The VEX Robotics Competition College Challenge uses the VEX Round Up game with small modifications. Anyone that already has a VEX Round Up field can use it for the VRC College Challenge, with a few additional/modified components.

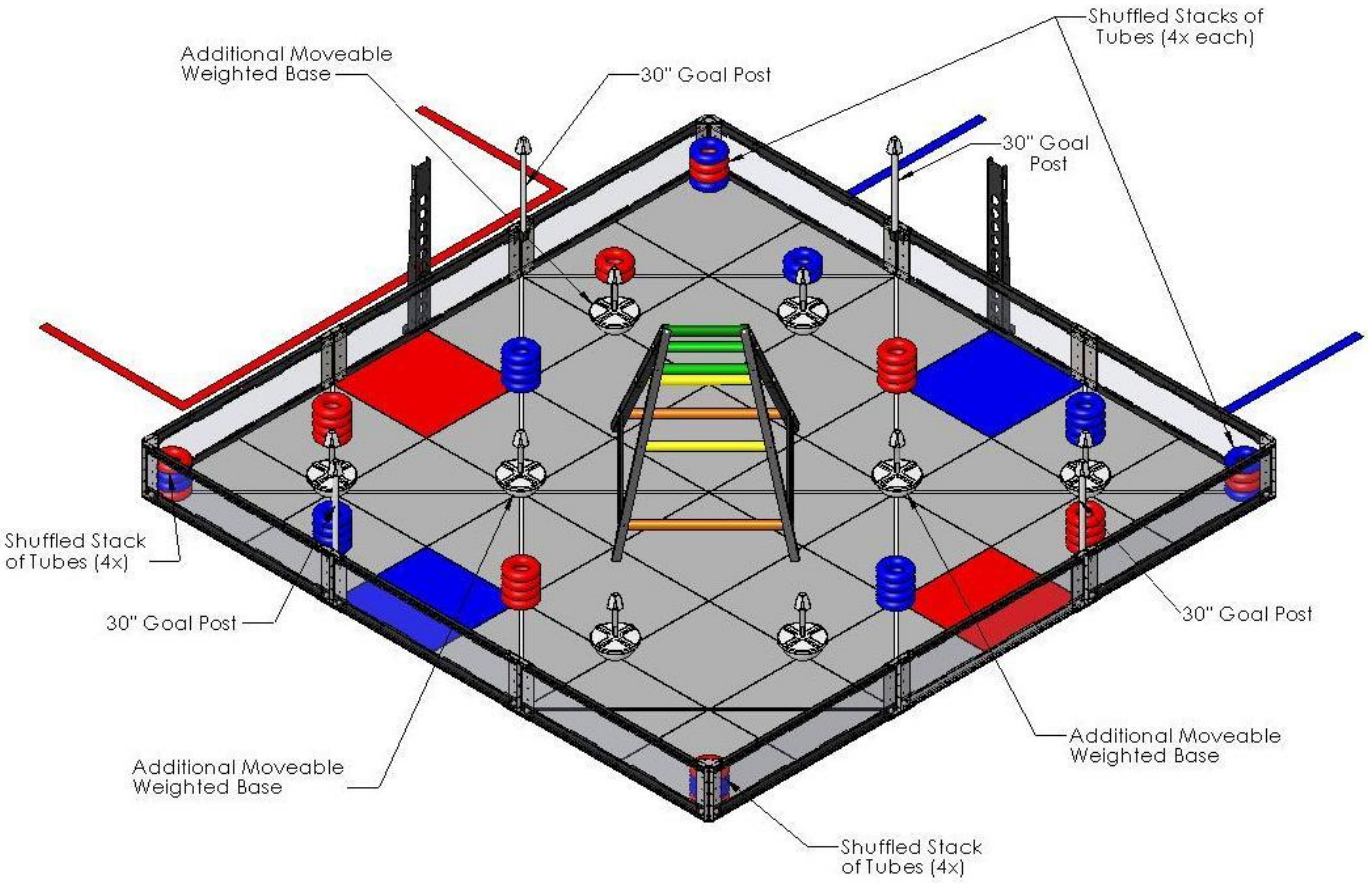
Please consult the VEX Round Up Game Manual for the foundation set of competition details. All the same Game, Robot, & Tournament rules apply except for the modifications listed in this document. In the event of a rules conflict the rules listed in this document and rulings on the College Challenge Q&A 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!
    - 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.
    - 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.
7. Each team starts with six (6) tubes in autonomous mode. These tubes can be distributed among the team's robots in any manner. (i.e. one robot can start with all six tubes if desired)
8. There are three (3) additional Movable Weighted Bases on the field, in the locations shown in the following diagrams. In addition, one of the movable weighted bases is in a different location than in the normal VEX Round Up game.
9. There are four (4) additional stacks of four (4) tubes, with one (1) stack being placed in each corner of the field. These stacks have two (2) of each color in a "shuffled" arrangement. (i.e. Red-Blue-Blue-Red or Blue-Red-Red-Blue) Please see the following diagrams for the exact details.
10. The tops of the Goalposts which are mounted to the wall are now ~30" off the ground.
11. There is an additional hanging definition:
    - *Ultra High Hang* -- A *robot* is considered to be *ultra high hanging* if it is touching the *ladder* AND every part of the *robot* is entirely above the bottom of the lowest green ladder rung. A robot which is considered to be *ultra high hanging* is not considered *high or low hanging*.
    - A *robot* that is *ultra high hanging* from the *ladder* is worth thirty (30) points for the corresponding team.





Note: *This appendix only details changes and additions specific to the College Challenge. Please make sure you refer to the VEX Round Up Game manual for full game rules and descriptions.*

Game, Robot, and Tournament Rules cont.

Robot Rule Modifications:

1. The maximum allowable starting size for a robot is 18” x 18” x 18”.
    a. This is not a change from the normal VEX Round Up game, but is a change from the VEX Clean Sweep College Challenge
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-EDR CORTEX Microcontroller
    a. No other types of VEX Microcontroller are permitted

4. Each Robot is permitted to use up to twelve (12) VEX EDR motors or VEX Servos (Any combination, up to twelve)
    a. Of these twelve (12) allowed motors, teams may use a maximum of four (4) "2-Wire Motor 393"
5. Each Robot must use one (1) VEXnet module.
6. 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”).
7. 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, and can only be connected via any of the externally accessible ports.
    b. Sensors and Electronics CANNOT directly electrically interface with the VEX Motors.
    c. The additional Sensors and Electronics may only receive power from any of the following:
        i. Directly from the VEX Microcontroller via any externally accessible 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.)
    d. 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 http://www.vexrobotics.com/round-up-qa