VEX ROBOTICS COMPETITION

CHANGE UP

2020 - 2021
Appendix B - Skills Challenge

Appendix B
Robot Skills Challenge

Overview

This Appendix describes the combined Robot Skills Challenge rules for VEX Robotics Competition Change Up.

Please note that the Robot Skills Challenge may not be offered at all tournaments. Please check with your local Event Partner or www.robotevents.com for more information.

Robot Skills Challenge Description

In this challenge, *Teams* will compete in sixty second (1:00) long matches in an effort to score as many points as possible. These Matches consist of *Driving Skills Matches*, which will be entirely driver controlled, and *Programming Skills Matches*, which will be autonomous with limited human interaction. *Teams* will be ranked based on their combined score in the two types of *Matches*.

The playing field will have *Field Elements* setup exactly the same as a normal VEX Robotics Competition Change Up Match, however, the *Balls* will start as displayed below.

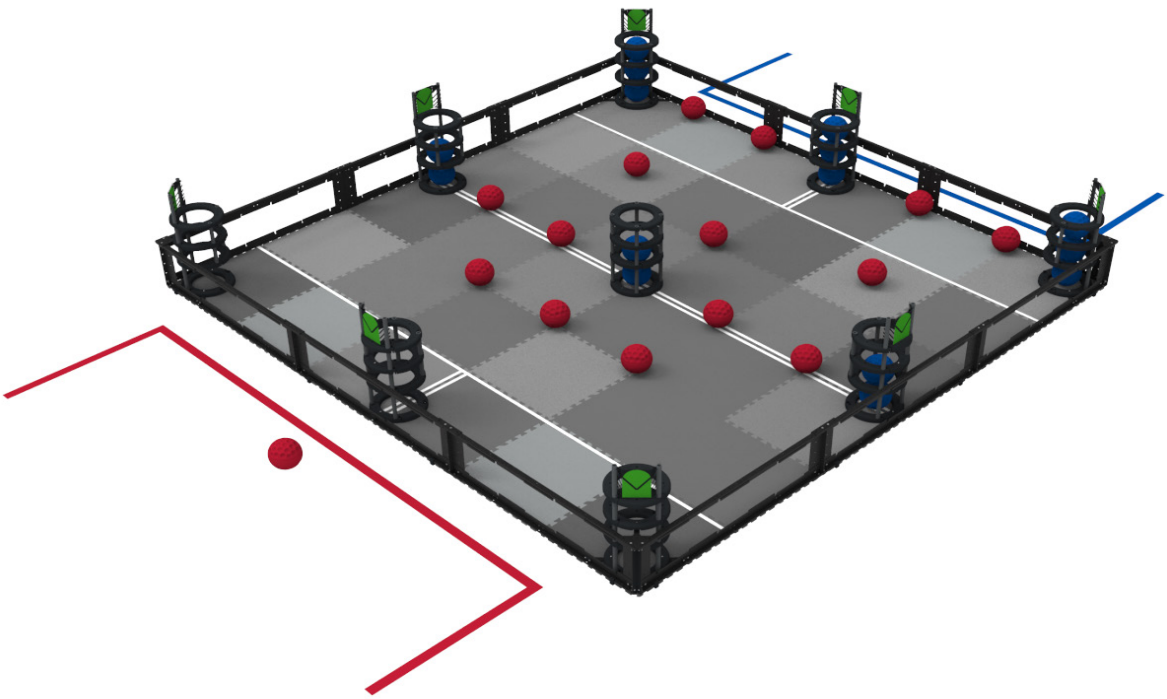

Figure 1: Side view of the field in its initial setup configuration.

Game Definitions

Please note that all definitions from "The Game" section of the manual apply to the Robot Skills Challenge, unless otherwise specified.

Driving Skills Match – A *Driving Skills Match* consists of a sixty second (1:00) *Driver Controlled Period*. There is no *Autonomous Period*. *Teams* can elect to end their run early, however this will count as an official run.

Programming Skills Match – A *Programming Skills Match* consists of a sixty second (1:00) *Autonomous Period*. There is no *Driver Controlled Period*. *Teams* can elect to end their run early, however this will count as an official run.

Robot Skills Match – A *Driving Skills Match* or *Programming Skills Match*

Robot Skills Challenge Rules

Please note that all rules from "The Game" section of the manual apply to the Robot Skills Challenge, unless otherwise specified.

<RSC1> *Robots* may start the *Robot Skills Match* per <SG1> in either *Home Zone* with the *Drive Team Members* standing in the *Alliance Station* that corresponds with that *Home Zone*.

Note: The other three (3) *Preloads* are not used in a *Robot Skills Match*.

<RSC2> In *Robot Skills Matches*, *Teams* play if they are on the red *Alliance* Scoring only red *Balls* and Owning only red *Goals*.

<RSC3> Rules <SG2> and <SG3> do not apply in *Programming Skills Matches*.

Robot Skills Challenge Scoring

Teams receive points according to the same Scoring rules in VEX Robotics Competition Change Up when Scoring for the red *Alliance*.

Robot Skills Challenge Ranking at Events

- For each *Robot Skills Match*, *Teams* are awarded a score based on the above scoring rules.
- *Teams* will be ranked based on the sum of their highest *Programming Skills Match* score and *Driving Skills Match* score. The *Team* with the highest sum will be declared the Robot Skills Challenge Winner.

- In the case where two *Teams* are tied for the highest score, the tie will be broken by looking at both *Teams*' highest *Programming Skills Match* score. If the *Teams* remain tied, the tie will be broken by looking at both *Teams*' highest *Driving Skills Match* score. This process will repeat looking at the next highest *Programming Skills Match* and then *Driving Skills Match* until the tie is broken.

- If the tie cannot be broken (i.e. both *Teams* have the exact same scores for each *Programming Skills Match* and *Driving Skills Match*), then the following ordered criteria will be used to determine which Team had the "best" *Programming Skills Match*.
  1. Number of *Connected Rows*.
  2. Number of Scored *Balls*.

- If the tie still cannot be broken, the same process in the step above will be applied to the *Teams*' best *Driving Skills Match*.

- If the tie still isn't broken, events may choose to allow *Teams* to have one more deciding *Driving Skills Match*, or declare both *Teams* the Robot Skills Challenge Winner.

Robot Skills Challenge Ranking Globally

- *Teams* will be ranked Globally based on their Robot Skills scores from Tournaments and Leagues that upload results to robotevents.com according to the following tiebreakers.

  1. Highest Robot Skills score (combined *Programming Skills Match* and *Driving Skills Match* Score from a single event)
  2. Highest *Programming Skills Match* score
  3. Highest *Driving Skills Match* score
  4. Earliest posting of the Highest *Programming Skills Match* score, i.e. the first *Team* to post a score ranks ahead of other *Teams* that post the same score at a later time.
  5. Earliest posting of the Highest *Driving Skills Match* score, i.e. the first *Team* to post a score ranks ahead of other *Teams* that post the same score at a later time.

Robot Skills Challenge Format

- The Robot Skills Challenge is an optional event. *Teams* who do not compete will not be penalized in the main tournament.

- *Teams* may play *Robot Skills Matches* on a "first come, first serve" basis, or by a pre-scheduled method determined by the *Event Partner*.

- *Teams* will be given the opportunity to play exactly three (3) *Programming Skills Matches* and three (3) *Driving Skills Matches*. *Teams* should be aware of when the Robot Skills fields are open so that they do not miss their opportunity, e.g. if a *Team* waits until five minutes before the Robot Skills fields close, then they have not used the opportunity given to them and will not be able to compete in all six matches.