TSA VEX IQ Challenge National Championship
2017 National TSA Conference

TSA VEX IQ Challenge (VIQC) - Competition Guidelines

Overview

The VEX Robotics Competition (VRC) and VEX IQ Challenge (VIQC) are the largest and fastest growing high school and middle school robotics programs globally. Each year, an exciting engineering challenge is presented in the form of a game. TSA VEX IQ teams - with guidance from their teachers and mentors - build innovative robots and may compete year-round in a variety of matches, including state competition and the TSA VEX IQ National Championship held at the annual National TSA Conference.

Challenge

Participants design and build a robot using the engineering design process that will best address the challenge of the designated VEX game design for the VEX IQ Challenge. In the TSA VEX Robotics Competition (TSA VIQC), teams compete in Robot Skills Challenges that showcase programming and robot operation prowess.

The robot should be structurally efficient, capable of scoring in both robot and programming modes of operation, and demonstrate real-time scoring ability in tournament matches.

For the 2016-2017 season, the VEX IQ Challenge game is Crossover. Entries must be started and completed during the current school year.

Eligibility

In addition to annual TSA affiliation, TSA VEX IQ teams must be registered on www.robotevents.com in order to compete at TSA VEX IQ events. TSA VEX IQ teams must be affiliated with TSA, registered as a VEX IQ Challenge (VIQC) team, and paid in full by **March 1st, 2017** to participate in the 2017 TSA VEX IQ National Championship.

Participants are limited to two (2) teams per chapter, with a minimum of two (2) and a maximum of six (6) participants per team.

Attire

Competition attire, as described in National TSA Dress Code (www.tsaweb.org/Dress-Code), is required for the duration of this event. Teams will be subject to a 20-point deduction in their final combined Robot Skills ranking for any infraction.

Procedure

A. TSA event registration: TSA state advisors approve of and submit eligible teams for the national TSA VEX IQ Championship event based on advancement guidelines. Additional teams may be waitlisted by notifying TSA.

B. Participants check in their robots at the time and place stated in the TSA conference program.

C. Inspection: Robots are inspected using official VIQC inspection sheets. Students are present for the robot inspection. Robots must pass inspection in order to be eligible for competition. Repairs and adjustments may be made, as required, in order for robots to pass inspection. Inspection must be completed within the designated timeframe and before a team competes in any component of the competition. Re-inspection of a robot may be ordered at any time throughout the competition by a referee to verify that a robot meets inspection requirements.

D. Robot Skills Challenge: Including both Robot Skills and Programming Skills, this part of the competition determines the team rank for advancement to the Teamwork Challenge Finals. Each team should complete at least one (1), but no more than three (3), of each skills challenge. The best Driver and Programming Skills scores will be combined into the team's Robot Skills score, used to rank teams for the Teamwork Challenge Finals.
E. Teamwork Challenge Finals: Teams will be matched according to their Robot Skills score and assigned slots in the Teamwork Challenge Finals, which are comprised of two-team collaborative alliances working to achieve the highest score possible.
F. Excellence Award: Judges review the team's Robot Skills score and the score of the team's submitted Engineering Notebook to determine the best overall VEX IQ team. Team conduct and competition attire throughout the event may be a factor in the Excellence Award.

Regulations

A. Teams must be affiliated with TSA and registered as a VEX Robotics Competition team, via www.robotevents.com, by March 1st, 2017.
B. Teams must be approved by their TSA state advisor to advance to the national level event.
C. Team members must wear TSA Competition Attire.
D. Robots must pass official VEX IQ Challenge inspection before competing.
E. Engineering Notebooks are returned to student teams at the end of the competition.
F. The entry (the robot and notebook) must be the sole work of the members of a team. At TSA VIQC events, students showcase their knowledge and skills in designing, building, repairing, and programming a robot, and in documenting their learning in their Engineering Notebook.
G. The Engineering Notebook is a requirement to be considered for the Excellence Award.
H. Referee rulings are final. Teams are responsible for confirming scored matches before a field is reset. Only team drivers may share their questions or concerns with a referee. Recordings on phones or other electronic devices will not be reviewed to challenge a score.
I. Students are expected to showcase good sportsmanship and conduct themselves in a respectful manner. Failure to do so may result in disqualification.

Evaluation

Three (3) evaluation components contribute to the determination of the Excellence Award.

Driver Skills Challenge – a one minute (60 seconds) challenge in which a team operates its robot in the competition field using driver skills and controller(s), with the opportunity to score as many points as possible unopposed by any other robot. Each team has up to three (3) attempts to achieve its highest score. The team's highest Driver Skills score is used to determine the team's Robot Skills ranking.

Programming Skills Challenge – a one minute (60 seconds) challenge where a team operates its robot in autonomous mode on the competition field using programming skills, with the opportunity to score as many points as possible unopposed by any other robot. Each team has up to three (3) attempts to achieve its highest score. The team's highest Programming Skills score is used to determine the team's Robot Skills ranking.

Robot Skills Score – a combination of a team's highest Driver Skills score and highest Programming Skills score. This ranks teams for the Head-to-Head Tournament. The top three (3) Robot Skills scoring teams will be recognized.

Teamwork Challenge Finals – Teams compete to achieve the highest score as a two-team collaborative alliance. The highest scores win the tournament.

Excellence Award – This award goes to the top three (3) robotics teams once all competition and judged award criteria are evaluated. Team sportsmanship, attire, and conduct throughout the event are factors for this award.

Additional Information

To register a VIQC Team please visit: www.robotevents.com

To find out more about the VIQC game, Crossover, please visit:
http://www.roboticseducation.org/competition-teams/vex-iq-challenge/