2023 ROBOTICS STATE TOURNAMENT
Sponsored by *FIRST* in Upper Midwest and Presenting Partner-MSHSL

Season Begins
The season shall correspond with all dates and guidelines outlined by the *FIRST* Robotics Competition.

Contest
All FIRST robotics teams in Minnesota are eligible to participate in the 36-team MSHSL State Tournament held on May 6th, 2023 at Williams Arena on the University of Minnesota Twin Cities campus. Teams will qualify for the event based on their performance at *FIRST* regional events, regardless of the location of those events.

Teams will be charged $750 entrance fee and are responsible for their own transportation, food, and housing expenses. Please note that unlike other MSHSL activities robotics teams do not pay an annual registration fee when they register with MSHSL. This entrance fee will be the only MSHSL fee for robotics.

Team load-in, pit setup, robot inspection, and field connection testing will occur on Friday, May 6th in the evening.

Robot Requirements
Teams will follow all the rules and guidelines of the FIRST Robotics Competition. Each robot must pass inspection to compete.

Team Membership
All students eligible for membership on a FIRST Robotics team will be eligible for the State Tournament. Students must be in Good Standing as defined by MSHSL rules to participate. Exception: No students in grade 6 or under will be eligible.

Regions
All Minnesota robotics teams belong to one of eight geographic regions. The Minnesota Robotics Coaches Association with approval from MSHSL assigns teams to regions with the goal of creating meaningful geographic groups with a similar number of teams.
Region assignments are available at https://www.mshsca.org/regions.

MSHSL Eligibility Information Brochure
Prior to participation in the state co-sponsored event, the student and one parent or guardian must sign and return one copy of the 2023 Robotics Eligibility Form to the student's school or the lead team mentor. The student and parent or guardian signature will certify that they have read, understand, and agree to abide by the information provided. The form may be found at the bottom of this page:
https://www.mshsl.org/sports-and-activities/robotics

State Tournament Qualification

Teams qualify based on their performance at their initial *FIRST* Robotics Competition regional event. Teams earn state tournament points as per the table below. State tournament points are based on the district point system outlined in section 11.8 of the 2023 FRC Game Manual, with some modifications because teams only earn points for the first event they attend.

Once all regional events have concluded and *FIRST* in Upper Midwest has calculated state tournament points the 36 slots available at the MSHSL State Tournament are assigned as follows:
- The two highest ranked in each region will receive an invitation
- The remaining teams receive an invitation in ranking order regardless of region

Many of the point calculations are manual operations. Consequently, there may be errors in point totals. *FIRST* in Upper Midwest and MSHSL will make every effort to correct any errors. Questions about rankings should be sent to StateRankings@mnfirst.org .

Category	Points
Qualification Round Performance	$QualificationPoints(R, N, \alpha) =$ $$\left[InvERF\left(\frac{N - 2R + 2}{\alpha N}\right)\left(\frac{10}{InvERF\left(\frac{1}{\alpha}\right)}\right) + 12 \right]$$ (For a typically sized event, this will result in a minimum of 4 points being awarded for Qualification round performance. For events of all sizes, a maximum of 22 points will be awarded.)
ALLIANCE CAPTAINS	Equal to 17 minus the ALLIANCE CAPTAIN number (e.g. 14 points for ALLIANCE #3 Captain)
Draft Order Acceptance	Equal to 17 minus the Draft Order Acceptance Number (e.g. 12 points for the team that is fifth to accept an invitation)
Playoff Advancement	Points awarded based on team participation in individual playoff rounds, and whether or not the ALLIANCE advances. See FRC Manual Section 11.8.1.3 Playoff Round Performance for details.
Judged Team Awards	10 points for the Impact Award 8 points each for the Engineering Inspiration and Rookie All Star Awards 5 points each for all other judged team awards
Hall of Fame	Teams that entered the FRC Hall of Fame within the last 5 years and are thus ineligible to apply for the Impact Award will receive 5 points.
Team Age	5 points for any team that was a rookie in 2021, 2022, or 2023

Detailed Point Descriptions

The 2023 FRC Game Manual includes detailed descriptions of each point category:

- Section 11.8.1.1 describes Qualification Round Performance
- Section 11.8.1.2 describes ALLIANCE Selection Results
- Section 11.8.1.3 describes Playoff Round Performance
- Section 11.8.1.4 describes Judged Team Awards
- Section 11.8.1.5 describes Team Age

FUM and MSHSL would like to reiterate from section 11.8.1.4 that the points earned for team awards cannot capture the value that the teams winning those awards bring to our program, nor do the points represent the value of the awards to FUM, MSHSL, or *FIRST*.

Tiebreaker

If any teams have the same number of points, the following hierarchy of tiebreakers will be used to break the tie:

Sort Order	Criteria
1st	Total Playoff Round Performance Points
2nd	Best Playoff Round Finish at a single event
3rd	Total ALLIANCE Selection Results Points
4th	Total Qualification Round Performance Points
5th	Highest Individual MATCH Score, regardless of whether that score occurred in a Qualification or Playoff MATCH
6th	Second highest Individual MATCH Score, regardless of whether that score occurred in a Qualification or Playoff MATCH
7th	Third highest Individual MATCH Score, regardless of whether that score occurred in a Qualification or Playoff MATCH
8th	Random Selection

Alternate Teams

If, prior to the competition, any team is unable to participate or a qualifying team declines their invitation, an alternate will replace that team. Teams must accept their invitation to the MSHSL Tournament within one week of final notification.

Alternate teams are selected as follows:

- If the original team's region no longer has two qualifying teams, the alternate is the next highest ranking team from that region
- Otherwise the alternate team is the next highest ranked team regardless of region

Alternate teams will have 48 hours to respond to an invitation.

Tournament Details

General

Competing teams will exhibit the qualities of Gracious Professionalism® and compete in the spirit of Coopertition®. Unless otherwise noted in this document, the tournament will follow all rules and processes described in the 2023 *FIRST* Robotics Competition Game Manual.

Disputes

Any disputes arising during the competition shall be reported to the Head Referee and Tournament Director for resolution.

Awards

Trophies: Awarded to the three teams in first, second, and third place ALLIANCES.

Medals: Awarded to the members of the three teams in first, second, and third place ALLIANCES (25 per team). Additional medals can be purchased after the event.
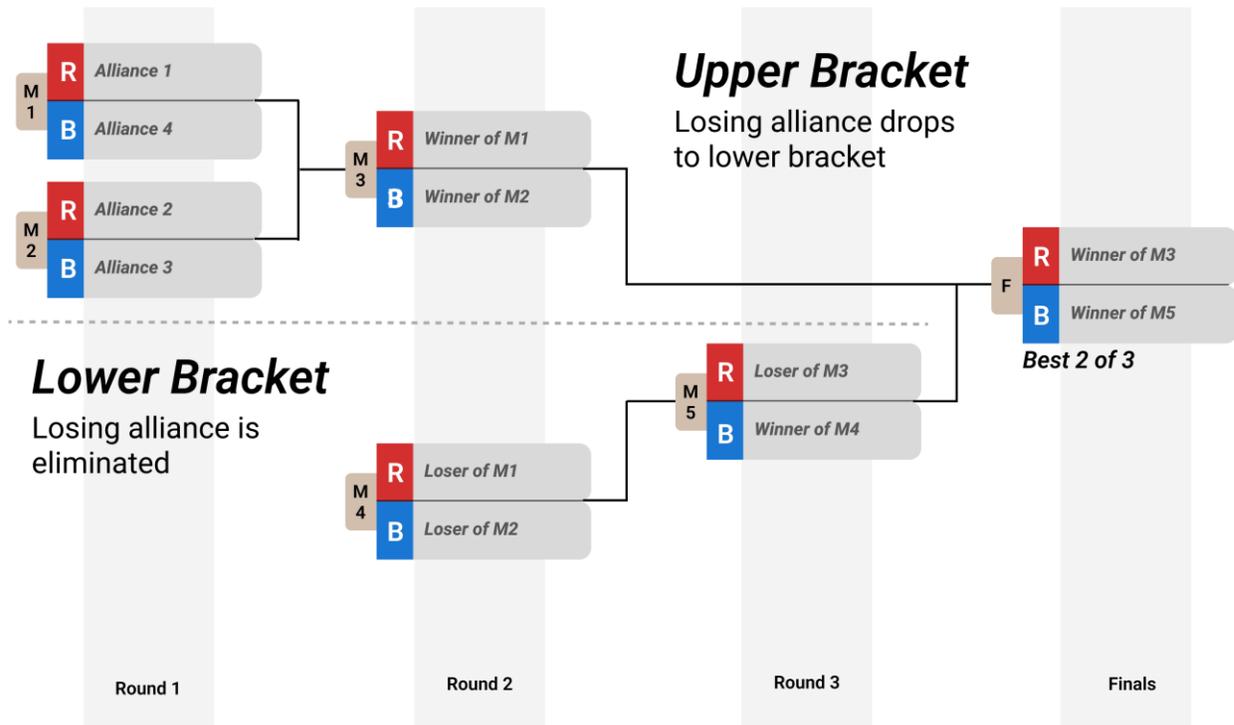
Certificate of Participation: Each team qualifying for the state tournament will be given 25 certificates of participation. Additional certificates can be purchased after the event.

Playoff Tournament Format
The Minnesota State High School League tournament will use a double elimination playoff format as described in section 11.7 of the FRC Game Manual with two exceptions:

- The playoff tournament will contain only four alliances
- The playoff match bracket will be modified as below to support four alliances

There will be a 15-minute breaks between each Round and between each Finals match.

Event Schedule

We will release a more detailed schedule closer to the event.

Friday Night
- Load-in
- Pit setup
- Registration
- Robot inspection
- Field connection test
- Field calibration

Saturday
- Driver's meeting
- Opening ceremonies
- Qualification matches
- Alliance selection

- Playoff matches
- Awards ceremony