4.0 Tournament Day Outline

FIRST Tech Challenge tournaments pack many activities into one day. The main events for a tournament (Qualifying Tournament, League Tournament, State Championship, World Championship) are as follows:

1. Team Check-in
2. Robot and Field Inspection
3. Judges’ Interviews
4. Drivers’ Meeting
5. Opening Ceremony
6. Qualification Matches
7. Alliance Selection
8. Elimination Matches
9. Awards and Closing Ceremony

Teams competing in a League and attending Meets will only participate in the following activities during the meet:

1. Team Check-in
2. Robot and Field Inspection
3. Driver’s Meeting
4. Qualification Matches

4.1 Tournament Schedule
Tournament schedules will be available through the Tournament Director before or at the tournament. Qualification Match schedules are created on tournament day after all Teams have checked-in and have passed all Inspections.

4.2 Team Check-In

4.2.1 Consent and Release Forms
Each student competing at a FIRST Tech Challenge tournament must have a signed consent and release form completed by a parent or legal guardian. Students cannot compete without a signed consent and release form. These forms can be filled out electronically or by hard copy.

- Electronically – A printed roster showing that each student’s parent or guardian has electronically filled out the consent and release form online. This is shown on the roster with a green checkmark.
- Hard copy – The coach or mentor must bring a signed hard copy of the form signed by the student’s parent or legal guardian.

The roster from the Team Registration System MUST be handed in at event registration, regardless if the coach is handing in hard copies of each consent and release form. If the roster from the Team Registration System is blank, the coach should write in the names of each student competing at the tournament.

4.2.2 Team Check-In Packets
Once checked in, the coach will receive their Team packet. Team packets generally include Drive Team badges, a judging schedule, a map of the venue, and other information that is important to the Teams. The Team should review the schedule of events for the day. Teams should set up their Pit Area and get familiar with the venue, including where the practice and Playing Fields are and where judging takes place.
4.3 Robot and Field Inspection

FIRST Tech Challenge Robots are required to pass Robot and Field inspections before being allowed to compete. These inspections ensure that all Robot rules are met. A copy of the official FIRST Tech Challenge “Robot Inspection Sheet” and “Field Inspection Sheet” are found in Appendices A and B of this manual. FIRST encourages Teams to use the Robot Inspection Sheet as a guide to pre-inspect their Robot prior to attending a tournament.

4.4 Judges’ Interviews

At FIRST Tech Challenge tournaments, there are three parts to the judging process: 1) interview with judges; 2) evaluation of performance during the tournament; and 3) evaluation of the engineering notebook. Each Team will have a ten to fifteen minute “fact-finding” interview with a panel of two or three judges. At the start of the interview, students will have a maximum of 5 minutes to present to the judges. After the Team’s five-minute presentation, the Judges will have the opportunity to ask questions about the Team, the Robot, outreach efforts, etc.

The judges’ interviews take place before any Qualification Matches so the entire Team may be interviewed. When Teams arrive at the tournament, the interview schedule should be included in the registration materials. Teams must know when they will be interviewed and arrive to the interview room early. Each Team should have at least two student Team representatives and the Robot available; the entire Team is encouraged to join in. Mentors (no more than two) are welcome to watch the Judges’ Interview at most tournaments but cannot take part in the interview.

Teams may not opt out of judges’ interviews. Teams may attend their scheduled judges’ interviews if their Robots have not passed inspection.

4.5 Drivers’ Meeting

The drivers’ meeting takes place before the start of Qualification Matches and is a time when the Drive Team meets with the referees. During this time, the Head Referee gives a brief outline of what is expected of Teams. They will provide venue specific information, such as queuing paths, and explains any signals and commands referees will give during Matches.

4.6 Practice Time

At some tournaments, practice fields are available for Teams to practice throughout the tournament. Practice time is offered on a first-come, first-served basis. Teams should check with the Tournament Director if practice time will be allowed on tournament day.

4.7 Opening Ceremony

The opening ceremony is the official kickoff of the tournament for the Teams, volunteers, and spectators. During the opening ceremony, a tournament official or the Emcee will welcome the Teams, introduce dignitaries and other special guests, and introduce the judges and the referees. Then the game will be described (usually with a video) and immediately after, the Qualification Matches take place.

Teams that are scheduled in the first four Qualification Matches will be asked by volunteers to line up before the opening ceremonies. The Qualification Match schedule will be available before the start of opening ceremony. It is the Team’s responsibility to check the schedule and make sure they are on time for their Matches.

4.8 Qualification Matches

Teams are randomly assigned to Qualification Matches and Alliances. The Qualification Match schedule is available before opening ceremonies on the day of the tournament. This schedule shows Alliance partners, Match pairings, and the Alliance’s color (red or blue). These Matches start immediately after the opening ceremonies and follow the Qualification Match schedule. The queue volunteer crew works with Teams throughout the day maintain the Qualification Match schedule. Teams must pay attention to the Match
schedule and listen for announcements throughout the day. *Teams* need to know when they will compete, find out the number of the last *Match* before lunch, and find out which *Match* is the last *Match* of the tournament day.

4.8.1 **Calculating Ranking**

*Teams* at a Tournament are ranked as follows:

1. Average *Ranking Points*; highest to lowest
2. Average *TieBreaker Points*; highest to lowest
3. Highest *Match* Score
4. Random Electronic Draw

*Teams* may be required to play a *Surrogate Match*, which is an extra *Match* marked by an asterisk on the *Match* schedule. The added *Surrogate Match* does not count towards their standings during the tournament.

At the end of each *Match*, *Ranking Points* and *TieBreaker Points* are awarded:

- **Average *Ranking Points*** are calculated by adding the *Ranking Points* (2 for a win, 1 for a tie, 0 for a loss, disqualification, or no-show) for each *Match* and dividing by the total number of *Matches* played.

- **Average *TieBreaker Points*** are calculated by adding the *TieBreaker Points* for each *Match*, then subtracting the lowest scoring *Match* (5-6 *Matches*, one *Match* is subtracted; 7 or more, two are subtracted) and then dividing by the total number of *Matches* played minus the dropped *Match*.

*TieBreaker Points* are awarded based on the following:

- The number of *TieBreaker Points* assigned for each *Match* is that of the losing Alliance’s score. Both Alliances receive the pre-penalized score of the losing Alliance as their *TieBreaker Points*.
- If a *Match* ends in a tie, both Alliances receive the same number of *TieBreaker Points*, equal to the lowest pre-penalized score.
- If a *Team* is disqualified or no-show, they receive zero (0) *TieBreaker Points*. This *Match* will not be subtracted as the lowest *Match* score and will count in the *Team’s* rankings.
- If both *Teams* on an Alliance are disqualified, the winning Alliance *Teams* are awarded their own pre-penalized score as their *TieBreaker Points* for that *Match*.

**Example:**

<table>
<thead>
<tr>
<th>Match</th>
<th>Team</th>
<th>Ranking Points</th>
<th>TieBreaker Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Match Played</td>
<td>1111</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Second Match Played</td>
<td>1111</td>
<td>2</td>
<td>65</td>
</tr>
<tr>
<td>Third Match Played</td>
<td>1111</td>
<td>0</td>
<td>125</td>
</tr>
<tr>
<td>Fourth Match Played</td>
<td>1111</td>
<td>1</td>
<td>200</td>
</tr>
<tr>
<td>Fifth Match Played</td>
<td>1111</td>
<td>2</td>
<td>78</td>
</tr>
</tbody>
</table>

In this example, the *Team* competed in five (5) *Matches*. The first *Match* had the lowest amount of *TieBreaker Points*, and therefore those points (15) will be dropped from the **Average Tiebreaker Point** calculation.
Therefore, this Team has an **Average Ranking Points** of 1.4 (2 + 2 + 0 + 1 + 2 divided by 5), and an **Average Tiebreaker Points** of 117 (65 + 125 + 200 + 78 divided by 4, since the first Match was dropped from the ranking).

### 4.8.2 League Play Ranking Calculation

Teams that compete in a League structure carry over Match data from one Meet to the next, with their top Matches used as their ranking within the League. After the first Meet, the Team’s Match scores will be carried forward into the next Meet using the same guidelines as outlined in section 4.8.1. Once a Team competes in their second Meet, they are ranked using the top 10 Matches, continuing to use the same guidelines.

When a Team reaches the League Tournament, all of their Meet Match data is imported into the League Tournament scoring system. At the end of the League Tournament with 5 Matches played, the Team will have their best 10 Matches from the Meets, plus 5 from the League Tournament for 15 total Matches. The scoring system will then drop the two lowest TieBreaker point from those 15. All Matches from the League Tournament will count towards the rankings. One match is considered higher than another match if it results in more Ranking Points for the team. If two matches produce the same Ranking Points, then the match that produces higher TieBreaker points is considered. If two matches produce the same Ranking Points and TieBreaker points, the match with the higher score is considered.

### 4.9 Alliance Selection

The number of Teams in the Elimination Matches is based on the number of Teams in the tournament. If there are 21 or more Teams in the tournament, the Elimination Matches consist of Alliances of 3 Teams each. If there are 20 Teams or less, then the Alliances consist of 2 Teams each. There are four (4) Alliances that will compete in the Elimination Matches.

The Alliance Selection consists of several rounds of selections so all Alliance Captains form Elimination Match Alliances. These Alliances participate in a ladder-type tournament to decide the tournament’s Winning Alliance. The Alliance Selection is as follows:

- Each Team chooses one student to act as the Team’s representative. These representatives will continue to the Competition Area at the appointed time to represent their Teams in the Alliance Selection.
  - Teams can bring their scouting documents or communicate by phone with other teammates in the venue to aid them with their Alliance choices. Teams must remember that if they are communicating with teammates by phone, they must be gracious and considerate and not hold up Alliance Selection.
- The top four ranked Teams are called to the floor first. The student representative of the highest ranked Team is asked to step forward as the Alliance Captain to invite another available Team to join their Alliance.
- A Team is available if they are not already part of an Alliance or has not already declined an Alliance invitation. If a Team accepts, they are moved into that Alliance. If a Team declines, they CANNOT be invited to another Alliance, but are still available to select their own Alliance if the opportunity arises. If a Team declines, the Alliance Captain from the inviting Team must extend an invitation to another Team.
- The selection continues until all four Alliance Captains have been appointed and chosen one Alliance partner.
- If there are more than 20 Teams, the same method is used for each Alliance Captain’s second choice. The third member of each Alliance) from highest seed to lowest seed (that is, 1 → 2 → 3 → 4). Any Teams remaining after the lowest seeded captain makes their choice do not compete in the Elimination Matches.
4.10 Elimination Matches
The Elimination Matches are when the Alliances compete to decide who the winning Alliance is. The Matches are played in a seeded format where the top seed goes up against the 4th seed, and the number 2 seed goes up against the 3rd seed. Alliance colors are assigned as follows:

- Semi Finals
  - Seed #1 and Seed #4 compete against each other in the Semi Finals 1; Seed #1 is assigned as the red Alliance and Seed #4 is assigned as the blue Alliance.
  - Seed #2 and Seed #3 compete against each other in the Semi Finals 2; Seed #2 is assigned as the red Alliance, and Seed #3 is assigned as the blue Alliance.

- Finals
  - The winner of Semi Finals 1 is assigned as the red Alliance.
  - The winner of Semi Finals 2 is assigned as the blue Alliance.

In the Elimination Matches, Teams do not get Ranking Points; they get a win, loss or tie. Within each bracket (Semi-Finals or Finals) of the elimination, Matches are played to decide which Alliance advances. The advancing Alliance is the first Team to win two Matches. Any tied Matches are replayed until one Alliance has two wins and advances. An example tournament bracket appears here:

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During the Elimination Matches, two Teams from an Alliance compete on the Playing Field. If the Alliance has three Teams, the Team that sits out the first Match must play in the second Match, with no exceptions. If the Alliances play more than two Matches in any bracket, any combination of two Alliance Robots may be used. The Alliance Captain is not required to compete in every Match. No special accommodations are made for Robots that fail during the Semi Final and Final Matches. Teams should consider the robustness of the Robots when picking Alliance partners.

If a Team is disqualified during an Elimination Match, the entire Alliance is disqualified. The Match is then recorded as a loss. Before each Elimination Match, the Alliance Captain must let the referee know which two Teams are playing in the next Match two (2) minutes before the start of the Match.

All questions about a Match or scores must be brought forward to the Referees by using the referee question box located in the Competition Area. Only one student from an Alliance can enter the question box. A Team must enter the referee question box to dispute a Match before the start of the next Match played by the Alliance, regardless if the Team is participating in the next Match. The next Match played could involve
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different Alliances. Questions about the last Match of the Finals must be brought to the question box no later than 5 minutes after the announcement of the Match score.

4.11 Awards and Closing Ceremony
The awards and closing ceremony celebrate the Teams and their accomplishments throughout the tournament, as well as the volunteers who helped make the tournament possible. At the awards and closing ceremony, the finalists and winners of each award are announced. At most tournaments, the judges will line up to high five each Team as they receive an award.

4.12 Team Spirit & Styling
Competing as a Team is exciting as well as rewarding. Part of the fun and reward of being a Team member is the way the Team styles itself with Team T-shirts, trading buttons, hats, cheers, and costumes.

When deciding on a Team name or acronym, consider how to work a theme around it to make the Team more fun and recognizable. Refer to the Marketing and Outreach section of the website for information about FIRST and FIRST Tech Challenge logo use requirements: https://www.firstinspires.org/brand

4.13 Banners and Flags
Sponsors provide FIRST with banners to display in specified areas as a way of thanking them for their generosity. We encourage Teams to bring Team flags or sponsor banners, but we ask that you adhere to the following:

- Do not use banners or flags to section off seating. Saving group seats is not allowed.
- Hang banners in pit stations only, not on the pit walls.
- Teams may bring banners to the Competition Area, but please do not hang them there. This area is designated for official FIRST sponsors’ banners.

4.14 Spectators and Etiquette
Teams are allowed to have 2 student drivers, 1 coach, and one Human Player (per Alliance) at the Playing Field during their scheduled Matches. Spectators are not allowed in the designated Competition Area. Some tournaments may provide media passes for one additional Team member to gain access to a designated “media area”. Access to this area is only allowed with a media pass and only while the media representative’s Team is on the Playing Field. Spectators blocking the sidelines or accessing the media area without a pass will be asked to move. Repeated violations of this rule are considered egregious behavior.

4.15 Scouting
During the Qualification Matches, the scoring system selects each Team’s ally and opponents for each Match. In Elimination Matches, top ranking Teams can choose their own Alliance partners. Teams should select Alliance partners with abilities that complement their own strengths. Scouting during the qualifying rounds is a good way to learn the abilities and limits of the Teams and Robots competing at the tournament.

The following scouting strategy has been provided by the 2007 FIRST® Robotics Competition Chairman’s Award winners, FIRST Robotics Competition Team #365, the Miracle Workerz.

Teams use different methods to record information about other Teams – paper, computer, tablets, etc. Use whatever method is most comfortable for your Team. Scouting is important to find out how you complement other Teams in your Alliance and how you Match up against your opponents. No matter how you record it, focus on information which will be useful to your Team when you meet your Alliance partners to discuss strategy.

Some possible areas to gather information include:

- CAPABILITIES – what can the Robot/Team do and what does it not do?
• STRATEGIES – what does the Robot/Team do during the Match? How does the Team play the game?
• PERFORMANCE – how well does the Robot/Team do what it attempts? What are the Robot’s strengths and weaknesses?
• AUTONOMOUS – what does the Robot do in autonomous mode? Does the Team have multiple program options?

The more data points you can collect on strategies and performance, the better understanding you will have of a given Team. Information on a Team’s capabilities can be obtained by visiting the Team in the Pit Area or watching Match play.