

## 4.0 Tournament Day Outline

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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 get a minimum 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 *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

All *Teams* are ranked based on the same number of *Qualification Matches*. *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:

Match	Team	Ranking Points	TieBreaker Points
First Match Played	1111	2	15
Second Match Played	1111	2	65
Third Match Played	1111	0	125
Fourth Match Played	1111	1	200
Fifth Match Played	1111	2	78

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).

#### 4.9 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:

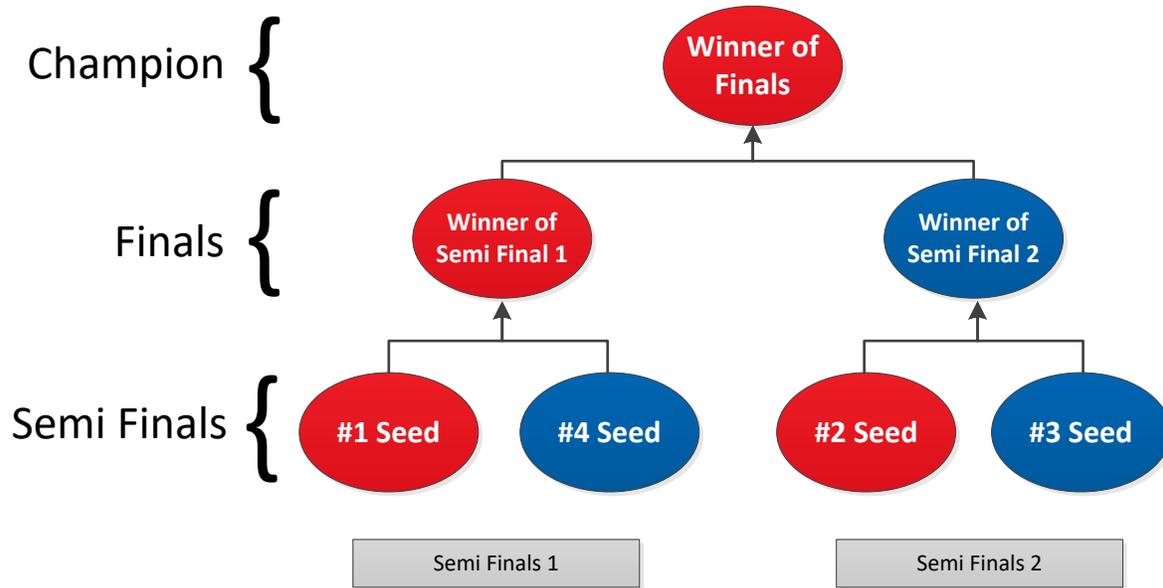
- Each *Team* chooses one student to act as the *Team's* representative. These representatives will continue to the *Competition Area* at the appointed time to represent their *Teams* in the *Alliance Selection*.
  - *Teams* can bring their scouting documents or communicate by phone with other teammates 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 4<sup>th</sup> seed, and the number 2 seed goes up against the 3<sup>rd</sup> 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:



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 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.