3.0 The Tournament – Definitions and Rules

3.1 Overview
Students that engage in the *FIRST* Tech Challenge program develop Science, Technology, Engineering, and Math (STEM) skills and practice engineering principles (like keeping an engineering notebook), while realizing the value of hard work, innovation, and sharing ideas. Tournaments are exciting sporting events with head-to-head competition, judging interviews, and *Teams* and *Robot* performance awards. This section provides critical information that will help *Teams* have a fun and successful tournament day.

3.2 Tournament Definitions
Alliance – Each *FIRST* Tech Challenge *Match* consists of two, two-*Team Alliances*. These two *Teams* compete against an opposing *Alliance* (also made up of two *Teams*) to complete the game challenge and to earn the highest score. At tournaments with more than 20 *Teams*, the semi-final and final round *Alliances* consists of three *Teams* each. However, only two of those *Teams* compete during any one *Match*.

Alliance Captain – The student representative from an *Alliance's* highest ranked *Team* chosen to represent an *Alliance* during *Alliance Selection* and for the semi-final and final *Elimination Matches*. The entire *Team* is also called the *Alliance Captain*.

Alliance Selection – The process by which top-ranked *Teams* choose *Alliance* Partners for the *Elimination Matches*.

Alliance Station –The designated "Red" or "Blue" *Alliance* area next to the *Playing Field* where the *Drivers* and *Coach* stand or move within during a *Match*. *Station One* is the *Alliance Station* closest to the audience.

Competition Area – The *Area* where all the *Playing Fields, Alliance Stations,* scoring tables, and other tournament officials and tables are located.

Drive Team - Up to four representatives two (2) *Drivers,* one (1) *Coach,* and one (1) *Human Player* from the same *Team*. Only one (1) *Human Player* represents an entire *Alliance* in a *Match*.

Elimination Matches – A *Match* used to decide the Winning *Alliance*. *Alliances* of two or three *Teams* face off in a series of *Matches*, with two *Teams* per *Alliance* playing in each *Match*. The first *Alliance* to win two *Matches* continues to the next round.

Human Player – A student *Team* member that supplies *Scoring Elements* and is identified by wearing a tournament supplied "*Human Player*" badge or identifying marker. Only one *Human Player* represents the entire *Alliance*. For *Qualification Matches*, an *Alliance* must decide which *Team* will name the *Human Player*. If the *Alliance* cannot decide quickly, the *Team* listed in the *Match* list as "Red 1" or "Blue 1" for the *Alliance* has the responsibility for naming the *Human Player.* The *Human Player* must be from the *Teams* that are in the *Match.* For *Elimination Matches,* the captain of the *Alliance* has that responsibility.

Playing Field – The part of the *Competition Area* that includes the 12 ft. x 12 ft. (3.66 m. x. 3.66 m) field and all the elements described in the official field drawings.

Pit Area – The *Pit Area* is a separate space from the *Competition Area* where *Teams* can work on their *Robot* between *Matches*. The *Team* is provided a pit space which includes a table, a power source, and is 10 ft. (3.05 m) x. 10 ft. (3.05 m). Some pit spaces may vary based on tournament venue size limits. Check with your Tournament Director for official pit space sizes.

Practice Match – A *Match* used to provide time for *Teams* to get familiar with the official *Playing Field*.

Qualification Match – A *Match* used to decide the *Teams* that qualify for the *Alliance Selection* and move on to the *Elimination Matches*. *Alliances* compete to earn *Ranking Points* and *TieBreaker Points*.

Ranking Points – The first basis for ranking *Teams*. *Teams* earn *Ranking Points* for winning (two points), tying (one point), and losing or disqualification/no show (zero points) in a *Qualification Match*.

Robot - Any mechanism that has passed inspection and a *Team* places on the *Playing Field* before the start of a *Match*. To be legal, *Robots* must comply with the *Robot* Build rules in Section 7 of this manual.

Sports Start – A model of competition where *Teams* start their *Robot* after the 3-2-1 countdown.

Surrogate Match – *Surrogate Matches* are scheduled into the Qualification rounds of a tournament if the number of *Teams* at the tournament is not evenly divisible by four. The *Surrogate Match* is a way to ensure all *Teams* compete in a minimum of five *Matches*. This is an extra *Qualification Match* for those *Teams* scheduled in a *Surrogate Match* and does not count in the standings for *Ranking Points* or *TieBreaker Points*. These *Matches* are important in the entire standings of the tournament. These *Matches* should be played as if they were regular *Qualification Matches*. *Surrogate Matches* will be marked on the official *Qualification Match* schedule.

Team – An official *FIRST* Tech Challenge *Team* consists of no more than 15 student *Team* members. A *Team* is made up of pre-college students and is designed for students in grades 7 -12. Students cannot be older than high school-aged if they are participating *Team* members. All *Teams* in North America are required to register through the [Team Registration System](). *Teams* must have a minimum of TWO Lead Coaches or Mentors that have registered through the *Team* Registration System and have passed the [Youth Protection Program]() screening. The *Team* must be in good standing through the registration system to compete in *FIRST* Tech Challenge official tournaments.

TieBreaker Points – The second basis of ranking *Teams*. *TieBreaker Points* are used as the tiebreakers when *Teams* have equal *Ranking Points*. *TieBreaker Points* are awarded in the amount of the final score of the losing *Alliance* in a *Qualification Match*. Both *Alliances* receive the pre-penalized score of the losing *Alliance* as their *TieBreaker Points*.

3.3 Tournament Rules
<T1> Egregious behavior by any *Team*, *Team* member, or other representative of the *Team* is not tolerated at a *FIRST* Tech Challenge tournament. Violations of this rule result in penalties to the *Team*, and/or the issuance of a Yellow or Red Card. Egregious behavior includes, but is not limited to, repeated and/or flagrant violation of game rules, unsafe behavior or actions, uncivil behavior towards volunteers, competition personnel, or tournament attendees.

<T2> Yellow cards and red cards are used in the *FIRST* Tech Challenge to manage *Team* and *Robot* behavior that does not align with the [mission of *FIRST*](). Yellow and red cards are not limited to just the *Competition Area*. *Teams* that display egregious behavior in the *Pit Area*, judging rooms, stands, or any other location of the tournament can be issued a yellow or red card for egregious behavior.

Egregious or repeated (3 or more) *Robot* or *Team* member behavior at the tournament can result in a yellow and/or Red card. Yellow cards are additive, meaning that a second yellow card is automatically converted to a red card. A *Team* is issued a red card for any subsequent incident in which they receive an additional yellow card, for example, earning a second yellow card during a single *Match*.

Yellow and Red Cards at the Competition Field

The Head Referee may assign a yellow card as a warning, or a red card for *Disqualification* in a *Match*. A yellow card or red card is signaled by the Head Referee standing in front of the *Team's Alliance Station* and holding a yellow card and/or red card in the air.

To issue the second yellow card, the Head Referee will stand in front of the *Team's Alliance Station* and hold a yellow card and red card. The Head Referee will signal the second yellow card after the *Match* has ended.

A *Team* that has received either a yellow card or a red card carries a yellow card into following *Matches*, except as noted below. A red card results in *Match* Disqualification. Multiple red cards may lead to tournament disqualification. Once a *Team* receives a yellow card or red card, the *Team* number is presented with a yellow background on the audience screen at the beginning of all following *Match*es. This is a reminder to the *Team*, referees, and audience the *Team* carries a yellow card.

Yellow cards do not carry over from the *Qualification Matches* to the *Elimination Matches.* For regions that compete in League Meet formats which carry *Qualification Match* scores from Meet to Meet, Yellow and Red Cards to not carry from one Meet to the next Meet or to a League Tournament. During the *Elimination Matches*, yellow and red cards count against the entire *Alliance,* not to a specific *Team.* If a *Team* receives a yellow card or red card, it results in the entire *Alliance* receiving the yellow card or red card for that *Match*. If two different *Teams* on the same *Alliance* are issued yellow cards, the entire *Alliance* is issued a red card. A red card results in zero (0) points for that *Match*, and the *Alliance* loses the *Match*. If both *Alliances* receive red cards, the *Alliance* which committed the action earning the red card first chronologically loses the *Match*.

Yellow and Red Cards off the Competition Field

Teams can incur yellow and red cards for their actions off the competition field. Egregious behavior off the competition field should be reported to the Tournament Director. The Tournament Director will first consult with the coach of the *Team* about the behavior of the *Team* or its members, explain the ways in which the behavior is considered egregious, and give a warning to discontinue this behavior. If the behavior persists, the Tournament Director will work with *FIRST* Headquarters to assess whether the behavior exhibited by the *Team* is considered egregious and if a yellow and/or red card should be issued. If it is determined that the *Team* should receive a yellow and/or red card, the Tournament Director will report to the Head Referee. The yellow and/or red card will be recorded into the scoring software based on the next *Match* played by the *Team* during *Qualification Matches*. If a *Team* is competing in *Elimination Matches* receives a yellow or red card between the *Qualification Matches* and *Elimination Matches*, the card will be applied to the first *Elimination Match*. If a *Team* receives a yellow or red card during the *Elimination Matches* for off field behavior, the yellow or red card applies to the current or just completed *Elimination Match*.

<T3> Referees have final game play and scoring authority during the competition. Their rulings are final.

   a. The referees will not review any recorded *Match* replays or photographs.

   b. 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. All questions must be brought forward within the outlined time:

   i. *Qualification Matches*: A *Team* must enter the question box to dispute a *Match* within a period of three (3) *Matches* following the disputed *Match*. *Teams* participating in the final two *Qualification Matches* must report to the question box within 5 minutes after the announcement of the *Match* score.

   ii. *Elimination Matches:* 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 playing 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.

Students must support their questions by referencing specific rules or posts to the Q&A section of the

official [*FIRST* Tech Challenge Forum](#). *Team* members must ask their questions in a gracious and respectful manner.

<T4> No *Team*, *Team* member, or tournament attendee is allowed to set up their own Wi-Fi 802.11 (2.4GHz or 5GHz) wireless communication in the venue. Non-allowed wireless communications include, but are not limited to:

a. Cellular hot spots (for example, cell phones, tablets, MiFi).

b. Ad-hoc networks.

c. Nintendo DS peer-to-peer.

d. Bluetooth communication with *Robots* in the *Competition Area*.

No *Team*, *Team* Member, or tournament attendee shall interfere with a *Team's* Wi-Fi Direct® communication with their own *Robot*.

The Penalty for violating rule **<T4>** is disqualification of the entire *Team* from the tournament and their removal from the venue property. *Teams* may not appeal the penalty and no refunds will be given for registration fees, prepaid meals, etc. *FIRST* may conduct a post-tournament review and decide if any added penalties will be imposed on the offending *Team*.

Teams are encouraged to report wireless security vulnerabilities to the Field Technical Advisor (FTA) at a tournament. *Teams* should always keep in mind *Gracious Professionalism*®, and therefore only report valid and verifiable violations of this rule. After the Field Technical Advisor is alerted of a potential rule violation, he or she will confer with the Head Referee. The Field Technical Advisor and Head Referee will further explore the potential violation of this rule. The Head Referee will work with *FIRST* Headquarters staff to determine if rule **<T4>** has been violated, and to disqualify the offending *Team*.

<T5> Wi-Fi connectivity between the Android devices used as the *Robot Controller* and the *Driver Station* is allowed. Additionally, in the pits only, Wi-Fi connectivity between the same Android devices and a computing device (phone, tablet or computer) is allowed for *Robot* programming purposes only. No other wireless communication is allowed.

The penalty for violating rule **<T5>** is disqualification of the entire *Team* from the tournament and their removal from the venue property. The Head Referee will work with *FIRST* Headquarters staff to determine if rule **<T5>** has been violated, and to disqualify the offending *Team*. *Teams* may not appeal the penalty and no refunds will be given for registration fees, prepaid meals, etc. *FIRST* may conduct a post-tournament review and determine if any additional penalties are to be imposed on the offending *Team*.

<T6> *Team* members may be asked by the Tournament Director to use a specific Wi-Fi channel on the tournament day. *Teams* must comply with the request of the Tournament Director if asked to use a specific Wi-Fi channel when supported by an approved Android Device. *Teams* that have Android Devices that support channel changing must comply with the request of the Tournament Director to switch their channel before playing in the next *Match*. Refusal to comply with this rule will result in a *Yellow Card*.

<T7> Each registered *Team* may enter only one *Robot* (a *Robot* built to play the current season's game challenge) into the *FIRST* Tech Challenge competition. It is expected that *Teams* will make changes to their *Robot* throughout the season and at competitions.

a. It is against this rule to compete with one *Robot* while a second is being adjusted or assembled at a tournament.

b. It is against this rule to switch back and forth between multiple *Robots* at a tournament.

c. It is against this rule to register and attend concurrent tournaments with a second *Robot*.

d. It is against this rule to use a *Robot* built by another *Team* at a tournament.

Violations of this rule will immediately be considered egregious and a deliberate violation of the rule.

<T8> Only four *Team* representatives are allowed in the *Competition Area*; two (2) student drivers, one (1) coach, and one *Human Player* who are identified by badges labeled 'driver', 'coach', or '*Human Player'*. These badges are interchangeable within a *Team* between *Matches*. Only student *Team* members wearing a badge labeled as 'driver' may drive the *Robot* during the *Match*. *Team* representatives beyond the two student drivers, one coach, and one *Human Player* will be asked to leave the *Competition Area* immediately.

Only one *Human Player* represents the entire *Alliance*. For *Qualification Matches*, an *Alliance* must decide which *Team* will name the *Human Player*. If the *Alliance* cannot decide quickly, the *Team* listed in the *Match* list as "Red 1" or "Blue 1" for the *Alliance* has the responsibility for naming the *Human Player.* The *Human Player* must be from the *Teams* that are in the *Match.* For *Elimination Matches,* the captain of the *Alliance* has that responsibility

<T9> *Playing Field* Access - *Team* members cannot enter the *Playing Field* for any reason other than to place/retrieve their *Robots*. *Teams* may not measure, test, or adjust *Field* or *Game Elements*. Inspection of the *Playing Field* elements by *Team* members to determine scoring is not allowed. The consequences for violating this rule are:

a) Minor Penalty for violation of this rule during *Match* setup or following the end of the *Match*.

b) Major Penalty for violations of this rule that delay the start of the *Match*.

c) Violations of this rule outside of normal *Match* play result in a yellow card*.*

> If a *Team* feels the *Playing Field* is not set up correctly, *Teams* should notify a *Referee* or *FTA* prior to the start of the *Match*.

<T10> Pre- *Match Robot* Placement – At the beginning of a *Match*, each *Alliance Robot* must be set up on the *Playing Field* according to Section 4.5.1 Pre- *Match* in the Game Manual Part 2. After *Robots* are set up on the *Playing Field*, *Drive Teams* must stand inside the *Alliance Station* The *Human Player* for the *Alliance* must stand inside the designated *Human Player Station*.

a. During the *Qualification Matches*, the blue *Alliance Robots* are set up on the *Playing Field* first, unless the red *Alliance* waives their right to set up on the *Playing Field* second.

b. During *the Elimination Matches*, the 3rd and 4th seeded *Alliance Robots* are set up on the *Playing Field* first, unless the higher seeded *Alliance* waives their right to set up on the *Playing Field* second. *Alliance* color doesn't change the seeding of a *Team* during the *Elimination Matches*. If the 4th seed defeats the 1st seed in the Semi-Finals, they will still have to place their *Robot* on the field first in the Finals because their seeding will be lower than the 2nd or 3rd seed.

c. During *Elimination Matches*, 3 *Team Alliances* may only place *Robots* that are intended to compete in that *Match*. Once two *Robots* are placed for the two *Teams* competing in a *Match*, the *Alliance* cannot swap in the 3rd *Alliance's Robot* for a *Robot* already placed.

d. *Teams* may implicitly waive their right to place their *Robots* on the *Playing Field* last by placing their *Robots* on the *Playing Field* before or with the opposing *Alliance*. There is no need to tell the referees; *Teams* waive their right by the act of placing their *Robots* on the *Playing Field*.

e. *Teams* that unnecessarily delay the beginning of a *Match* and/or field reset will incur a Minor Penalty for each offense.

> *Drive Teams* are expected to stage their *Robots* for a *Match*, and remove it from the *Playing Field* afterwards, safely and swiftly. *Drive Team* efforts that either intentionally or unintentionally delay the start of a *Match* or the *Field* reset are not allowed. Examples include, but are not limited to:
>
> - Late arrival to the *Playing Field*.
> - *Robot* maintenance once on the *Playing Field*.

<T11> The state of the field (game and scoring elements) is recorded as the *Match* is played by the Scoring Referees. *Scores* may not be announced to *Teams* until some time after the *Match* is complete. At some tournaments, live scoring software may be used to show the status of the *Match* as it is played, with the final, official score displayed following the end of the *Match*.

<T12> There are no *Team* requested time-outs during the *Qualification Matches*.

<T13> If no member of the *Drive Team* is present in the *Driver Station* at the start of a *Match*, that *Team* is declared a "no show". If a *Robot* cannot report for a *Match*, at least one member of the *Drive Team* should report to the *Playing Field* for the *Match*.

<T14> *Teams* will receive a minimum of five minutes (5:00) between consecutive *Matches*.

<T15> During the elimination rounds, each *Alliance* will be allotted ONE time-out of no more than three minutes (3:00). Time-outs must be called at least two minutes (2:00) before their next *Match's* starting time. The time-out begins at the time their *Match* was going to start.

<T16> All *Team* members, coaches, and their guests must wear ANSI Z87.1 certified safety glasses while in the *Pit* or *Competition Area*. Prescription glasses with ANSI Z87.1 approved Commercial Off-The-Shelf side shields are also allowed.

NOTE: *FIRST* requires all *Teams* to bring and supply ANSI-approved safety glasses for its *Team* members, mentors, and guests for each competition. Tinted lenses are allowed if tournament personnel can see the volunteer's, spectator's, or *Team* member's eyes through the safety glasses. Sunglasses or deeply shaded safety glasses used in our indoor tournament environment are not acceptable.

<T17> Skateboards, roller skates, 'hover boards', and drones are not allowed at any tournament. These items can create safety hazards to the *Teams*, spectators, or volunteers attending the tournament.

<T18> No live bands are allowed in the audience or *Pit*. No loud music, audio systems, whistles, banging sticks, blow horns, etc. are allowed. They prevent *Teams* from hearing important announcements. Power may be shut off and/or noisemakers confiscated.

<T19> Batteries must be charged in an open, well-ventilated area.

<T20> Painting or applying harmful products, sprays, or aerosols are not allowed anywhere in the tournament. This includes the *Pit*, *Competition*, and spectator areas.

Note: *Teams* may apply antistatic spray to their *Robot* if done outside the venue.

<T21> *Pit* displays may not exceed 10 ft. (3.05 m) x. 10 ft. (3.05 m) x. 10 ft. (3.05 m) or a limit set by the venue, whichever is less.

<T22> *Teams* are not allowed to use radios and walkie-talkies anywhere in the venue.

<T23> There is no running anywhere during the tournament. This is a safety hazard.

<T24> *Teams* are not allowed to save seating space as there is often not enough seating to hold everyone. Repeated offenses could be considered egregious, and *Teams* could face consequences for violating this rule.

<T25> Soldering, gluing, brazing, or large power tools are not allowed in the *Pit* or Competitions *Areas* unless the Tournament Director specifically allows them.

<T26> Because of site rules or contracts, *FIRST* cannot allow *Teams* or individuals to sell items, such as T-shirts, pins, etc., at any tournaments. Fundraising for a cause is allowed with consent of the Tournament Director; fundraising for a *Team* is not allowed.

<T27> Check with the Tournament Director before bringing food to a tournament, as some venues will not allow outside food on-site because of contracts and agreements.

<T28> Open-toed or open-backed shoes are not allowed in the *Pit Area* or in the *Competition Area*.

<T29> Once the *Autonomous* portion of the *Match* ends, *Drive Teams* will have 5 seconds to pick up their *Driver Station*. The scoring system display will provide visual and audio cues for *Drive Teams* to pick up their *Driver Stations*. After the 5 seconds, there will be a 3-2-1 countdown and the *Driver-Controlled* period of the *Match* will begin.

<T30> *Teams* competing in a Meet, League Tournament, Qualifying Tournament, and Championship Tournament will compete in no fewer than 5 *Qualification Matches*, and no more than 6 *Qualification Matches.*

<T31> A *Team* may not encourage another *Team* to throw a *Match* or to play beneath its ability. Likewise, a *Team* may not let another *Team* coerce them into throwing a *Match* or playing beneath their own ability. *FIRST* considers the action of a *Team* influencing another *Team* to throw a *Match*, to deliberately miss scoring objectives, etc. incompatible with *FIRST* values and not a strategy any *Team* should employ. Violations of this rule are likely to escalate rapidly to yellow or red cards and may lead to dismissal from the event. The following examples violate rule <T31>.

- Example 1: A *Match* is being played by *Alliance* partner *Teams* A and B in which *Team* B is encouraged by *Team* C to underperform/not score during a *Match*. *Team* C's motivation for this behavior is to negatively affect *Team* A's ranking.

- Example 2: A *Match* is being played by *Alliance* partner *Teams* A and B in which *Team* A is assigned to participate as a *Surrogate*. *Team* C encourages *Team* A to not fully participate in the *Match* so that *Team* C gains ranking position over *Team* B.

- Example 3: A *Match* is being played by *Alliance* partner *Teams* A and B in which *Team* A is assigned to participate as a *Surrogate*. *Team* A accepts *Team* C's request not to fully participate in the *Match* so that *Team* C gains ranking position over *Team* B.

NOTE: This rule is not intended to prevent an *Alliance* from planning and/or executing its own good faith strategy in a specific *Match* in which all the *Teams* are members of the same *Alliance*.