ARC Championship Site Manual

Purdue University

2026

V2.0

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Release Notes

Date	Version	Release Notes
June 9, 2026	2.0	• Updated list of Participating Teams • Updated Software Versions • Updated Event Schedules • Updated Practice Match Quantity
May 4, 2026	1.0	Initial Release

1. Competition Overview

1.1 Introduction

The ARC Championship (ARCC) 2026 features four events: the 3v3 Event, the 1v1 Event, the Engineer Challenge, and the ARCTIC (ARC Technical Innovation Conference). The first three events challenge student teams to design, build, and pilot robots that fill different roles. ARCTIC is an open-ended technical communication competition where teams showcase their most innovative work, rewarding open-source technical discourse to advance the caliber of the entire ARC community.

1.2 Organizing Bodies

ARCC 2026 at Purdue University is organized with cooperation from the following organizations:

- ARC Robotics - Competition Organizers
- Boilerbots at Purdue University

1.3 Participating Teams

The following teams are confirmed for the event and have passed the Final Assessment.

Table 1-1: Participating Teams

Team Name	Full School Name	1v1	3v3	Engineer
Advanced Robotics at the University of Washington	University of Washington	TRUE	TRUE	TRUE
Ascension Robotics	Simon Fraser University	TRUE	TRUE	TRUE
BlueBot	University of Michigan, Ann Arbor	TRUE	FALSE	FALSE
BoilerBots	Purdue University	TRUE	TRUE	TRUE
CU Robotics	University of Colorado Boulder	TRUE	TRUE	FALSE
EigenEnergy	University of California, Santa Barbara	TRUE	FALSE	FALSE
Error 404	University of Texas at Arlington	TRUE	TRUE	FALSE
Fang Robotics	Austin Community College	TRUE	TRUE	FALSE
MacFalcons	McMaster University	TRUE	TRUE	TRUE
NAGOYA SHACHIHOKO	Meijo University	TRUE	TRUE	FALSE
Northstar	University of Minnesota	TRUE	TRUE	FALSE
NYU UltraViolet	New York University	TRUE	TRUE	FALSE
PacificSpirit	University of British Columbia	TRUE	TRUE	FALSE
Phoenix Robots	Nagaoka University of Technology, National Institute of Technology, Nagaoka College	TRUE	FALSE	TRUE
PolySTAR	Polytechnique Montréal	TRUE	TRUE	FALSE
Queen's Knights Robotics Team	Queen's University	TRUE	TRUE	FALSE
RidgeBots	Ontario Tech University	TRUE	TRUE	FALSE

RoboGrinder at Virginia Tech	**Virginia Polytechnic Institute and State University**	**TRUE**	**TRUE**	**FALSE**
RoboRambler	**Georgia Institute of Technology**	**TRUE**	**TRUE**	**FALSE**
RoboTO	**Politecnico di Torino**	**TRUE**	**TRUE**	**TRUE**
Texas Aimbots	**Texas A&M University**	**TRUE**	**TRUE**	**TRUE**
Thornbots	**Rose-Hulman Institute of Technology**	**TRUE**	**TRUE**	**FALSE**
UCSD Triton Robotics	**University of California - San Diego**	**TRUE**	**TRUE**	**FALSE**
Ursaworks	**Washington University in St. Louis**	**TRUE**	**TRUE**	**FALSE**
AIM	**University of Nottingham**	**TRUE**	**TRUE**	**TRUE**

1.4 Competition Software Versioning

The following are the versions of RoboMaster Software being used for ARCC 2026. Not all versions will be publicly available.

Table 1-2: Competition Software Versions

Software Item	Version
RoboMaster Server	V11.3.1.335 (3v3) V11.5.1.319 (1v1) V11.6.1.316 (Engineer)
RoboMaster Client	V12.0.0.35
RoboMaster Referee Serial Protocol	RoboMaster 2026 University Series Communication Protocol V1.3.0
Referee Module Firmware(s)	Main Control Module: V12.0.0.3 Power Management Module: V12.0.0.3 Armor Module: V12.0.0.2 Speed Measurement Module: V12.0.0.3 Video Transmission Module (Sender): V12.0.0.9 Video Transmission Module (Receiver): V12.0.0.3 RFID Interaction Module: V11.0.0.3 Light Indicator Module: V11.0.0.1 Supercapacitor Management Module: V12.0.0.4

2. On-Site Details

2.1 Pre-Tournament Steps

Prior to playing competitive matches in the tournament, there are additional steps that all teams must complete. For when and where these take place, always refer to the latest published event schedule.

2.1.1 Team Check-In

Teams must check-in in order to receive critical information regarding their participation in the event, notify the organizers that the team has arrived, and receive their loaner referee system. Team Captains should arrive to check-in with no more than 3 team members total. An asynchronous Check-In form will be distributed via Email which will save time during in-person Check-In.
Teams should expect to complete the following during their Check-In:

- ☐ Check-In Form (Can be completed online prior to in-person Check-In)
    - ☐ On-Site Points of Contact & Contact Information
    - ☐ Number of participating members and badges
    - ☐ Confirming participation in events
    - ☐ Anonymous Statistics used to track the growth of ARC Robotics
- ☐ Checking-Out Borrowed Referee System
- ☐ Receiving Lanyards and Badges for Captains, Pilots, Pit Crew, and Members

2.1.2 Captain's Meeting

The Captain's Meeting contains critical venue-specific information, important safety and operational reminders, and drawing for randomly-assigned portions of the Tournament Format. Attendance is **mandatory** for all teams. Failure to attend may result in disqualification from the tournament. Each team shall send their team Captain(s) only (Multiple people allowed if different Captains for 3v3/1v1/Engineer).

2.1.3 Pre-Inspection

Pre-Inspection functions identically to Pre-Match Inspection, and serves as the first chance for teams to verify with referees that their robots are ready for gameplay. Pre-Inspection can be attempted an unlimited number of times until all robots have passed.It is **strongly** recommended that all teams pass Pre-Inspection before official Matches begin.

All teams must complete Pre-Inspection in order to be eligible for a practice match, though Pre-Inspection does not need to occur immediately before a Practice Match.

2.1.4 Practice Matches

After completing Pre-Inspection with all robots, teams are entitled to one 3v3 **or** two 1v1 Practice Matches. The Practice Match will be played using the official game server as a BO2. Scheduling will be done on a First-Come First-Serve basis, as managed by the respective Head Referee. Engineer Challenge Participants are entitled to Free Practice on the practice field.

2.1.4.1 Field Calibration

Field Calibration is another form of Practice where teams are permitted to bring their robots, debugging equipment, and pit crew members onto the field for the purpose of adjusting robot or sensor parameters. Examples include but are not limited to: Mapping of the field, adjustment of camera settings, measuring ground clearance on obstacles.

During Field Calibration the following rules shall be obeyed:

- Field Calibration shall be first-come first-serve with a 10-minute maximum for each Team. Each team gets one 10-minute session.
- Robots will not be connected to the official game server. Teams may not enter the Pilot Stations.
- Robots are not allowed to be loaded with projectiles and launching of projectiles is forbidden.

Field Calibration slots may be scheduled between Practice Matches and vice-versa based on the actual demand and availability.

2.2 Tournament Format

Regarding Final Assessment outcomes, the following penalties are issued based on the results.

- All teams which failed will be granted late submissions per the schedule below
- All teams which failed will be given -2 penalty points for their 3v3 Group Stage ranking
    - Additional failed or missing late submissions will each result in -1 additional penalty point
- All teams which failed will be given a 10-second penalty for all Engineer Challenge Attempts
- All teams which do not pass after the 3rd late submission period will be disqualified from ARCC 2026

Milestone	**Date** **All 11:00 PM Pacific**	**Total 3v3 Penalty**	**Total Engineer Penalty**
Original Submission Due	5/3		
Original Submission Results Released	5/4	0 if pass -2 if fail	0 if pass +10s if fail
1st late submission deadline	5/11		
1st late submission results	5/18	-3 if failed	+20s if fail
2nd late submission deadline	5/25		
2nd late submission results	6/1	-4 if failed	+30s if fail
3rd late submission deadline	6/8		
3rd late submission results	6/10	-5 if failed	+40s if fail

⚡	Teams which submitted their second attempt within the original submission period ending May 3rd will not be penalized.

Penalty points are applied prior to the group stage and affect intra-group rankings only. They have no effect once the elimination stage begins, do not count as match or round wins or losses, and do not impact robot or driver statistics.

Engineer time penalties are applied to every round played in the Engineer Challenge. At the transition from autonomous to human-piloted period, the field referee will count down the penalty duration for which the Pilot is not allowed to operate the robot, but the timer for the human-piloted period has begun.

2.2.1 3v3 Tournament Format

The 3v3 Tournament comprises two stages, the Group stage and the Elimination stage.

The Group stage takes the full lineup of participating teams and determines 8 teams to proceed to the Elimination stage.

⚡	The exact format of the 3v3 Group Stage is subject to change based on the actual number of attending teams.

2.2.1.1 3v3 Group Stage

The group stage is a single-round-robin BO2. There are 4 groups for the 3v3 event distributed as follows:

1. The top 4 ranking teams from the 2025 RoboMaster North America event are each placed as 1st seed into the 4 groups.
2. The 5-8th ranking teams from the 2025 RoboMaster North America event are randomly distributed into the 4 groups as the 2nd seed.
3. The remainder of teams are randomly distributed into the remaining slots.

In the event that the total number of participating teams in the 3v3 competition is not divisible by 4, Group A will be the largest group, followed by Group B, and so on.

Within each group, all teams play one BO2 Match against every other team. When all matches within a group are complete, the 2 teams in each group with the most score proceed to the Elimination Stage. Scoring is as follows:

Table 3-12: Group Stage Scoring

Outcome of BO2 Rounds	Points Earned
Win-Win	3-0 to the winner
Win-Loss	1-1 to both
Tie-Tie	0-0 to both

Win-Tie	1-0 to the winner

2.2.1.2 3v3 Elimination Stage

The Elimination stage is a 8-team double elimination bracket. All matches including the Grand Final are BO3. Each team must lose 2 matches total to become eliminated.
See the below diagram for the seeding from the groups

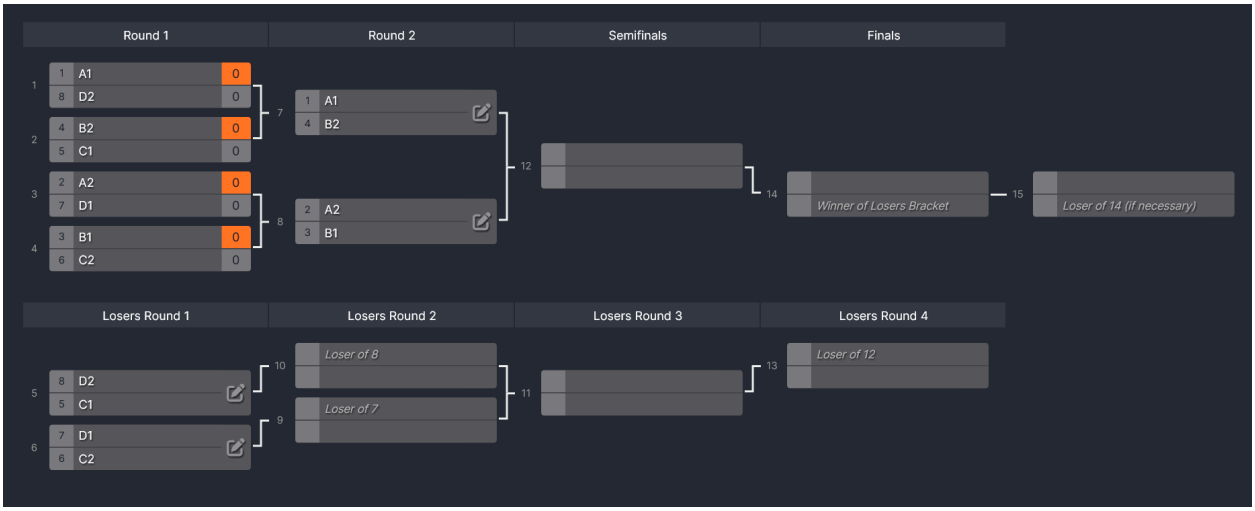


Figure 3-16: Double Elimination Bracket

⚡	**Note**: There can be a Grand Final Rematch if the winning side team has not lost a match in this stage and loses the First Grand Finals Match (match 14). The above image illustrates the double elimination format with 8 teams, including a possible rematch. In the event of a grand finals rematch, the teams will not exit the battlefield between the two matches, but instead be given a 10-minute extended setup period between the last round of match 14 and the 1st round of match 15.

2.2.2 1v1 Event Tournament Format

The 1v1 Event Tournament is comprised of two stages, the Group stage and the Elimination stage.

The Group stage takes the full lineup of participating teams and determines 8 teams to proceed to the Elimination stage.

2.2.2.1 1v1 Group Stage

The 1v1 Group stage consists of a Swiss tournament (Dutch System) with 6 stages.

The point values for matches is shown below:

Table 2-1: Swiss Match Points

Outcome of Rounds in Match	Points Earned
Win-Win	3-0 to the winner
Win-Loss	1-1 to both
Tie-Tie	0-0 to both
Win-Tie	1-0 to the winner
Bye	3 to the team

Teams are initially seeded based on how well they performed in last year's tournament. Any new teams that didn't participate last year are randomly placed at the bottom of the seeding.

At the conclusion of all swiss stages, if there are teams with equal points, four tiebreak conditions will be exercised in this sequence:

1. The round head to head between two tied teams, winner advances. Ex: A and B are tied, but A won in their match vs B. A wins the tiebreak.
2. The cumulative score, which is the sum of a team's score at every stage in the bracket. Higher cumulative score wins the tiebreak.
    a. Ex: See 5 matches played by two teams that end with 9 points. A's cumulative score is greater due to early wins compared to B,

Stage	A's Score	A's Cumulative Score	B's Score	B's Cumulative Score
1	3 (win)	3	0 (loss)	0
2	6 (win)	9	0 (loss)	0
3	9 (win)	18	3 (win)	3
4	9 (loss)	27	6 (win)	9
5	9 (loss)	36	9 (win)	18

3. Median Tiebreak score, the sum of the number of points earned by all opponents of both teams except the highest and lowest, with the greater winning the tiebreak.
4. If all 3 tiebreakers are still tied, then the teams shall play a BO3 head-to-head with the winner of the match winning the tiebreak.

The top 8 teams after all Swiss stages, after tiebreaks are applied, will advance to the Elimination Stage.

2.2.2.2 1v1 Elimination Stage

The 1v1 Elimination stage consists of a 8-team double-elimination bracket identical to the 3v3 Elimination Stage.

3. Event Schedule

3.1 Official Communication Channel

In the event that the schedule will be modified, ARC Operations will update the schedules posted on our website, and send announcements regarding the update via the following:

- ARC Community Discord server
- ARC team's mailing list
- Event livestream(s)

The Community Discord server is invite-only and intended for teams (prospective and current). Please contact operations@arc-robotics.org or your team leads for invitations to the server.

The ARC team's mailing list is gathered from season registration. If you believe your team email address is out-of-date, or would like to change it, please contact operations@arc-robotics.org.

Event livestreams will be hosted on both twitch.tv/arcrobotics and youtube.com/@arcroboticscompetition.

3.2 Day-by-Day Schedule

The actual schedule is subject to change each day based on the progress of the event and changes in organization. Any changes will be communicated via the official channels described in 3.1.

Find the official Event Schedule on the ARCC Season One webpage

3.2.1 ARCTIC Presentation & Lunch and Learn Scheduling

ARCTIC and Sponsor Lunch and Learns both take the format of a 30-minute presentation in a classroom-like setting. As such, they share the same venue and allocations in the daily schedule.

Table 3-2: ARCTIC and Sponsor presentation slots

<table>
<tr><th></th><th>Wed, 7/1</th><th>Thu, 7/2</th><th>Fri, 7/3</th></tr>
<tr><td>11:00AM</td><td colspan="3">Matches Ongoing</td></tr>
<tr><td>12:00PM</td><td colspan="3">Transit Period</td></tr>
<tr><td>12:15PM</td><td rowspan="2">Spectre (NYU)</td><td rowspan="2">Backfeeding, Easy to Disassemble Indexer (UCSD)</td><td rowspan="2">Client UI (RHIT)</td></tr>
<tr><td>12:30PM</td></tr>
<tr><td>12:45PM</td><td rowspan="2">[Sponsor]
Mujin</td><td rowspan="2">[Sponsor]
Manifold Tech</td><td rowspan="2">Runtime Config & Motor Config For ARC (NYU)</td></tr>
<tr><td>1:00PM</td></tr>
<tr><td>1:15PM</td><td rowspan="2">Sampling-based Controls (UCSD)</td><td rowspan="2">LiPo Based Supercap CTL (NYU)</td><td rowspan="2">Robotics Simulation (UCSD)</td></tr>
<tr><td>1:30PM</td></tr>
<tr><td>1:45PM</td><td colspan="3">Transit Period</td></tr>
<tr><td>2:00PM</td><td colspan="3">Matches Start Again</td></tr>
</table>

4. Venue Information

4.1 Competition Location and Hours

ARCC 2026 takes place at the Purdue Memorial Union (PMU) at 101 Grant St, West Lafayette, IN 47906. Secondary venue spaces are also in the adjacent building Stewart Center (STEW) at 128 Memorial Mall Dr, West Lafayette, IN 47907.

Both PMU and STEW are not exclusively reserved for ARCC 2026 and are otherwise open to the public and public spaces. ARCC 2026 rented the following rooms for our exclusive use:

Table 4-1: Reserved Rooms and Purposes

Room Number	Purpose
PMU North Ballroom	Teams' pit room
PMU South Ballroom	Fields room, sponsor booths area
PMU Director's Room	ARCTIC & Sponsor Lunch and Learns room
PMU Terrace Room	Pre-Match Inspection room
STEW 214	Teams' practice field & Testing area

Table 4-2: Reserved Rooms Doors-Open to Doors-Closed time

	Sun, Jun 28	Mon, Jun 29	Tue, Jun 30	Wed, Jul 01	Thu, Jul 02	Fri, Jul 03	Sat, Jul 04	Sun, Jul 05
PMU North BR [Pits]	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM
PMU South BR [Field]	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM
PMU Terrace [Inspection]	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM
PMU Director's Room [ARCTIC]	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 10PM
STEW 214ABCD [Practice Field]	8AM - 10PM	8AM - 10PM	8AM - 10PM	8AM - 12PM	8AM - 10PM	Closed	8AM - 10PM	8AM - 10PM

The doors-open to doors-closed time indicates when venue staff unlock/lock doors for our use. All personnel, staff and participants are expected to obey these cutoff times.

Matches will start no earlier than 9AM with the 8AM-9AM time being dedicated to warming up the venue and pre-match inspection.

Matches are scheduled to end no later than 9PM but may utilize the 9PM-10PM time in case of delays, appeals, or rematches.

4.2 Venue Map

Please refer to the official [Purdue Memorial Union website] for the most up-to-date maps of the venue. All annotated copies of maps in this document are for reference only and may not include the most up-to-date information.

Shown are annotated maps showing the walking path for teams to reach the Pre-Match Inspection, the walking paths during each match through the inspection and field areas, and the walking paths to the ARCTIC and Sponsor presentation room.

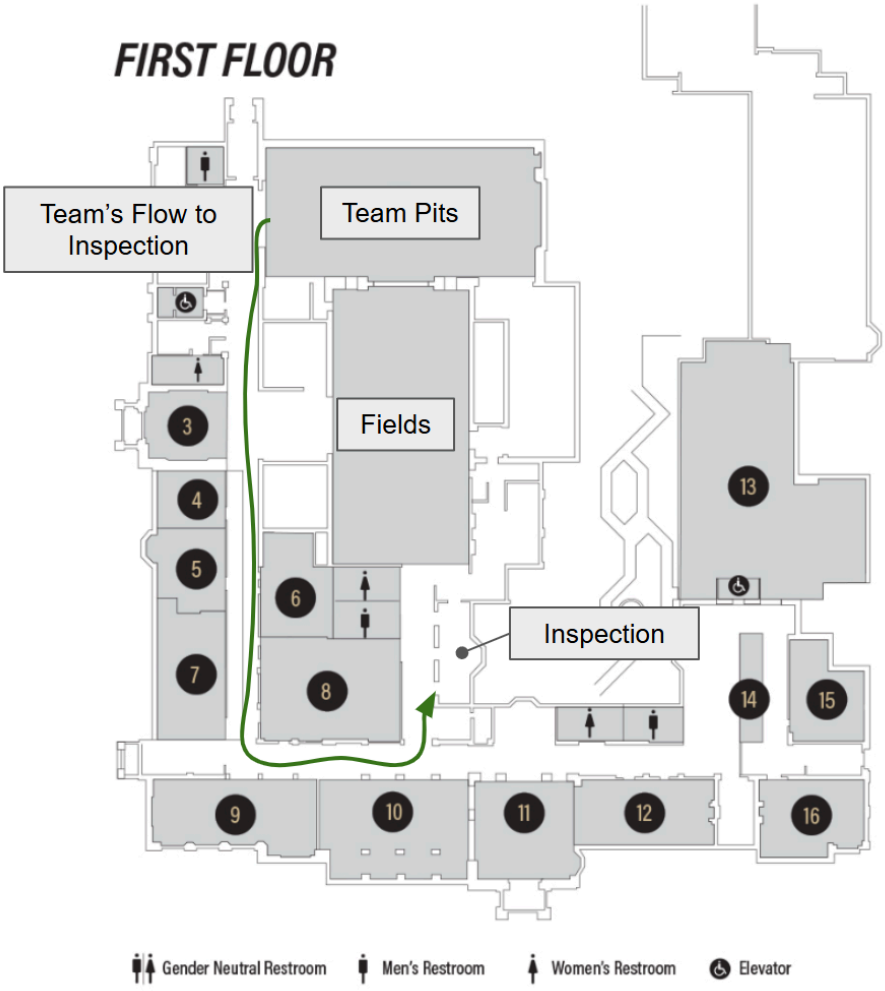


Figure 4-1: Team Pits to Inspection

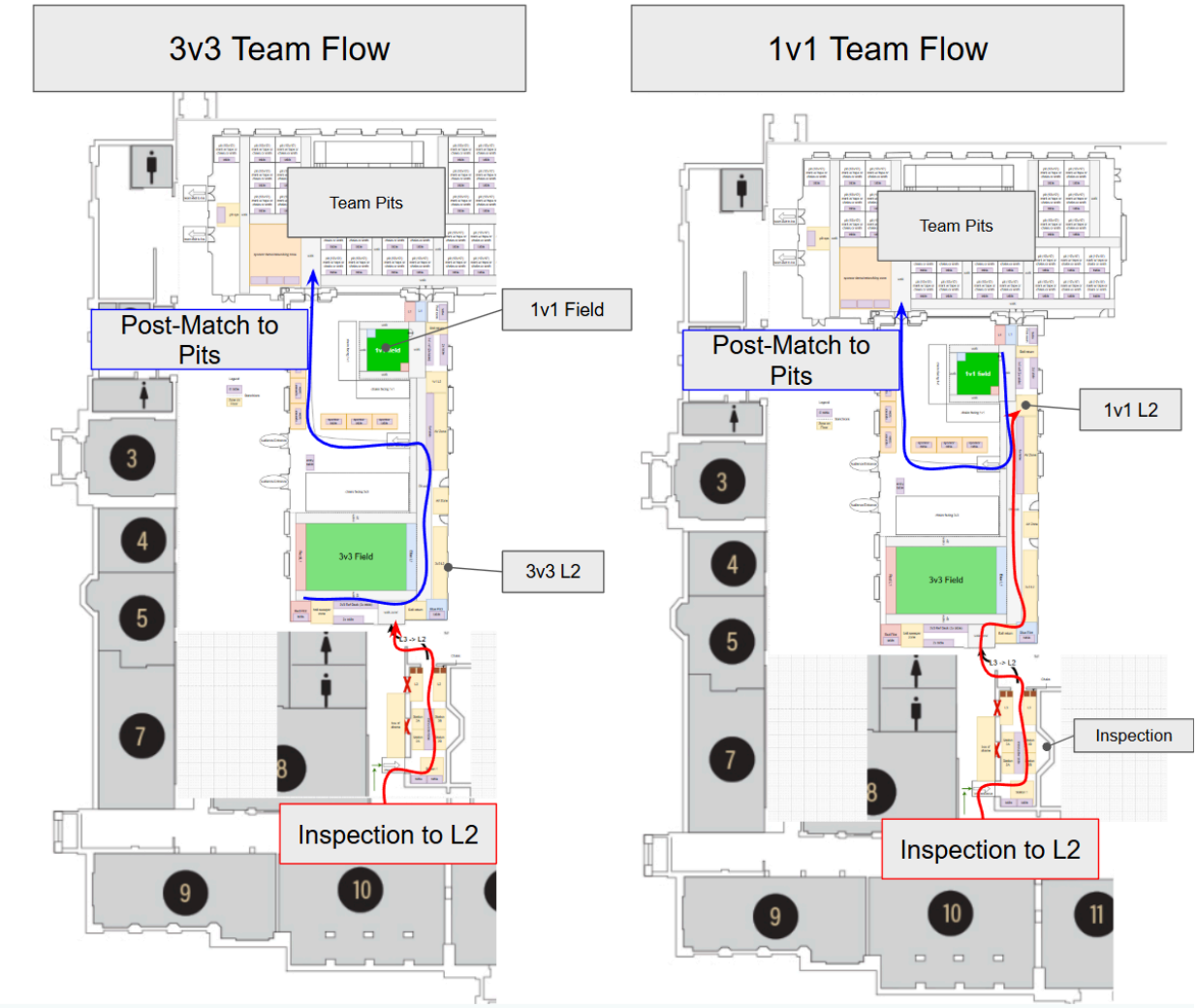


Figure 4-2: Team flow from Inspection to Field and back to Pits

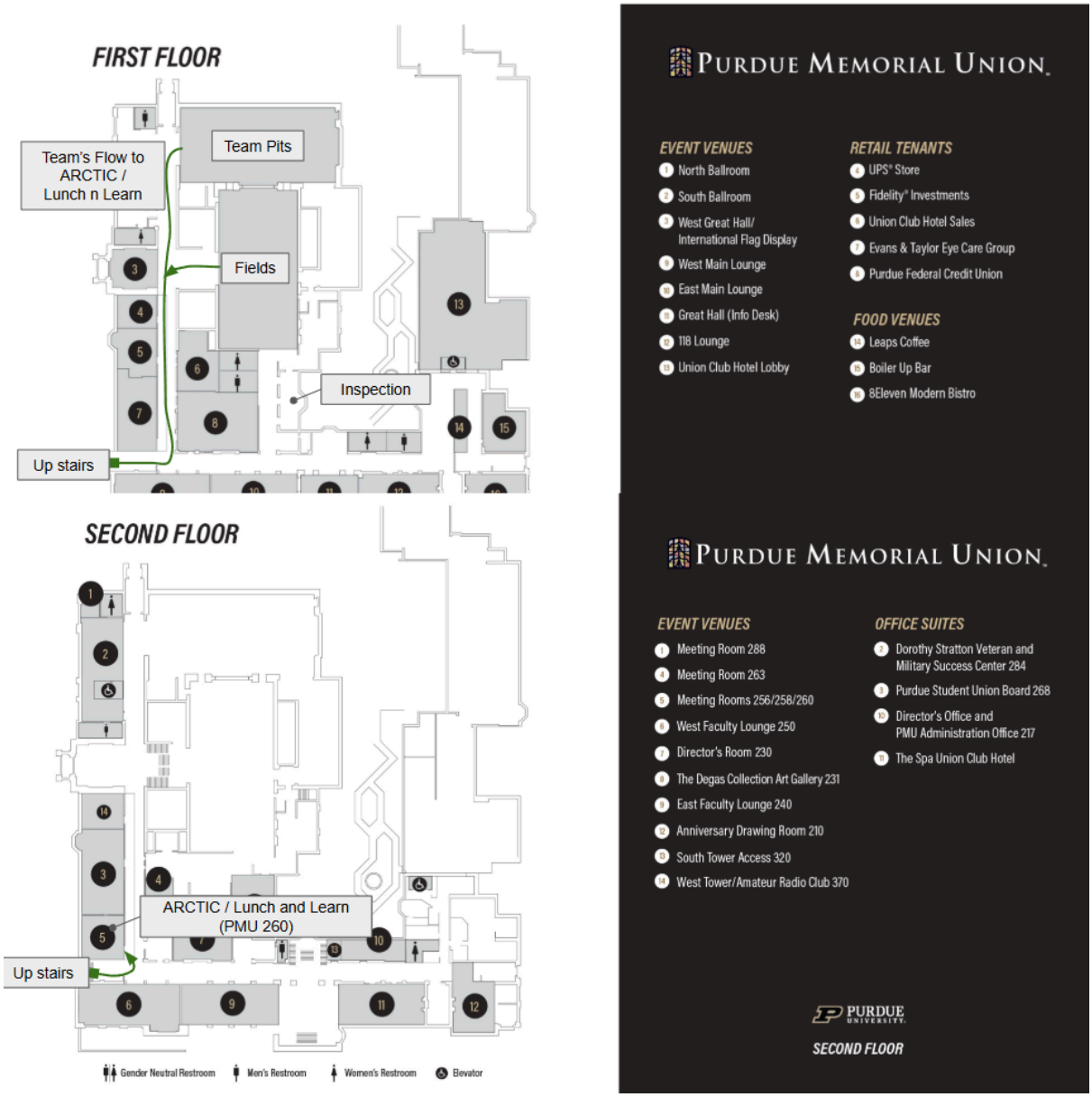


Figure 4-3: Team Pits and Field to ARCTIC and Lunch and Learn

5. Terms of Participation

Safety and Integrity are core values of ARC Robotics. As such, all participants in ARCC 2026 are required to abide by the following terms. Violation of these terms will be subject to consequences prescribed in the Events Manual.

1. While at the competition venue and elsewhere during the ARCC Season, Participants represent the ARC Competition and the ARC community. All Participants are expected to behave civilly in the shared, often public spaces as good stewards of ARC.
2. All participants are expected to understand the safety risks and follow relevant safety protocols associated with development and operation of robots, tools, and competition processes.
3. Robots used in competition shall always be operated with control. Operators shall never cause their robots to exhibit dangerous behavior.
4. Robots are required to be demonstrably safe, especially as it pertains to energy storing devices such as batteries, motors, and flywheels. Robots shall never harm Participants, Staff, Referees, or spectators. Robots shall not exhibit signs of smoke or fire.
5. Teams are required to take responsibility for any damage incurred as a result of misuse or mistreatment of property which is not their own. Teams are additionally responsible for any accidents and mishaps for which they are at fault.
6. Teams are required to obey all relevant laws throughout the competition.
7. On-Site Sponsors are a fundamental part of ARC as partners who believe in our mission of education and enable continued competitions each year. All participants are expected to treat sponsors graciously and professionally at all times. Interaction with Sponsors is not a mandatory part of ARCC participation.

ARC Robotics 2026

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