

Bellarmino College Preparatory Robotics

The Cheesy Poofs

FRC Team 254

FTC Team 23222

FTC Team 23223

FTC Team 23224

FTC Team 23229

FTC Team 23230

Team Handbook

2023 - 2024



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Welcome!

Welcome to Bellarmine Robotics! We are excited to invite you onto the team as a fully-fledged Cheesy Poof. This handbook contains the key policies, goals, and expectations of our team and its members along with other information you will need.

The success of our robotics team and its numerous other activities are all thanks to the dedication of our members. Your participation is essential to fulfilling our program's goals. Every member's commitment and responsibility keeps our team running smoothly. We hope that as part of Bellarmine Robotics, you will acquire life skills that you will continue to use throughout college and in your future career.

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Mission Statement

We aim to equip a community of students passionate about science and technology with the skills and initiative to become the next generation of leaders and create positive change in their respective career fields.

About

Bellarmino Robotics gives students the opportunity to become fully immersed in an environment of dedicated, like-minded students interested in engineering while acquiring the necessary skills to achieve their future goals. Not only do members acquire technical skill sets, they also learn the fundamentals of other corporate tasks, such as project management, leadership, team building, marketing, etc. More important than any competitive success or awards, the students on our team grow academically, intellectually, and socially. Our team members gain a better understanding, a greater respect, and a more profound appreciation of the benefits of a good education. In line with the mission of Bellarmino College Preparatory, our robotics team inspires and motivates our students to avidly pursue their academic, career, and personal goals both during their time on the team and in their futures.

Team History

Team 254 was founded in 1998 in partnership with NASA Ames Research Center. After Broadway High School's closure in 2000, Team 254 moved to Bellarmino College Preparatory. While the team's student members changed, The Cheesy Poofs have continued to flourish. Notable accomplishments and events include:

- 1999 : FRC Team 254 begins competing in the FIRST Robotics Competition
- 2001 : FRC Team 254 moves from Broadway High School to Bellarmino College Preparatory
- 2004 : FRC Team 254 wins the FRC Chairman's Award, FIRST's most prestigious award, and becomes a member of the FIRST Robotics Competition Hall of Fame
- 2009 : VRC Team 254 begins competing in the VEX Robotics Competition
- 2011 : VRC Team 254 wins the VEX Excellence Award, VEX's most prestigious award
- 2011 : FRC Team 254 wins the FRC World Championship
- 2014 : FRC Team 254 wins the FRC World Championship
- 2017 : FRC Team 254 wins the FRC World Championship

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- 2017 : FRC Team 254 wins the first FRC Festival of Champions in history
- 2018 : FRC Team 254 wins the FRC World Championship
- 2019 : FRC Team 254 finishes as a Finalist at the FRC World Championship
- 2020 : FRC Team 254 wins the Chairman's Award at the Central Valley Regional
- 2021 : FRC Team 254 wins the Autonomous Award at the Infinite Recharge at Home Challenge
- 2022 : FRC Team 254 wins the FRC World Championship
- 2022 : VRC Team 254 wins the VRC Silicon Valley California State Championship
- 2022 : VRC Team 254 wins the VEX World Championship
- 2023 : FRC Team 254 wins the Excellence in Engineering Award in the Archimedes Division of the FRC World Championship
- 2023 : The Cheesy Poofs add 5 FTC teams, Teams 23222, 23223, 23224, 23229, and 23230

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What We Do

Bellarmino robotics team members participate in two robotics programs, FRC and FTC. Students must select to participate in either FRC or FTC when joining the team and commit to that program for the full school year. Students may not switch between programs during the school year.

The *FIRST* Robotics Competition (FRC)

The FIRST Robotics Competition comprises approximately 3300 teams worldwide and releases an annual challenge requiring teams to design, build, and program robots to compete in 3 vs. 3 games.

Members work with faculty advisors and mentors to design and build advanced robots to compete in the FIRST robotics competition. After the game is revealed in January, FRC robots are built using computer-aided designs and advanced metalworking equipment. Over the course of an intensive 6-8 week period, our team builds multiple robots: a competition robot, and one or more additional robots for driving practice and programming.

During the Fall semester, the FRC team focuses on building skills needed for the Spring semester build and competition season. The team also competes in offseason tournaments with the prior year's robot during the Fall.

In Spring, beginning in January, the team works together on a single robot design, with subgroups existing for each aspect of the robot. All members can participate in any part of the design or build process.

Until Thanksgiving break, the FRC team meets weekly from 6:00 to 9:00 p.m. on Monday, Wednesday, and every other Friday. From after Thanksgiving break until Christmas break, the FRC team meets weekly from 6:00 to 9:00 p.m. on Monday, Wednesday, and Friday and from 1:00 to 10:00 p.m. on Saturday. In the Spring, the FRC team meets weekly from 6:00 to 10:00 p.m. on Monday, Wednesday, and Friday and from 1:00 to 10:00 p.m. on Saturday. However, specific build dates/times may change, and additional dates may be added at the discretion of team leadership and mentors. Members are required to attend these build sessions for the entire duration of each build.

The *FIRST* Tech Challenge (FTC)

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The FIRST Tech Challenge comprises approximately 6400 teams worldwide, requires teams to design, build, and program robots to compete in fast paced, technically challenging 2 vs. 2 games.

For FTC, members are split up into smaller teams of up to 15 students each, headed by student leaders and moderated by mentors, and faculty advisors. During the season, each FTC team builds and programs robots to meet the game's challenges. Teams have 6-8 weeks to build their robots before competitions begin in November. Throughout the school year, members compete in a series of tournaments with the goal of qualifying for the FTC State and World Championships.

Challenges for the FTC competition are released in early September and the teams begin to create their robots starting right away. Members can participate in any part of the design or build process.

The FTC teams meet Monday, Tuesday and Wednesday 3:00 to 6:00 p.m., and 2:00 to 6:00 p.m. on Fridays, however this is subject to change based on the discretion of team leadership and mentor availability. Members are required to attend these build sessions for the entire duration of each build.

Addressing COVID-19 and other Illnesses

DO NOT COME THE ROBOTICS LAB IF YOU ARE ILL.

We will follow Bellarmine's instructions in terms of restrictions and hygiene protocols for COVID-19 and other illnesses.

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Joining the Team

Robotics team membership is open to all students attending Bellarmine. All interested students are invited to attend the informational meetings and open builds, held at the beginning of the school year, to talk with team members and learn about all the aspects of the team. Prospective members must submit an application to join the team.

Members from the previous year must also reapply by submitting an application to rejoin the team. Decisions regarding acceptance of returning members are based on the member's prior year's level and quality of participation, behavior during meetings and builds, and their overall dedication to the team.

Following the announcement of the team roster, new and returning students invited to join the team must complete the student contract and pay the team fee online. A link will be provided when the roster is announced.

Eligibility & Expectations

In order for students to be eligible to participate and remain on the team, they must:

- Maintain academic eligibility
 - Academic eligibility requires students to maintain a GPA above a 2.0
- Comply with the rules established in the Team Handbook and by Bellarmine College Preparatory.
- Actively participate with the team for the duration of the school year.
 - Members are expected to regularly attend all builds, for the full duration of the build, throughout the entire school year.
- Participate in mandatory team activities, some of which include Chezy Champs, Bell VEX tournament, whole team meetings, etc.
- Complete lab safety training by the announced deadline
- Complete basic (Green) tool training by the announced deadline
- Sign-in immediately upon entering the lab for build and sign-out with a mentor when leaving at the end of build.
- Not misrepresent their role on the team in any way that could violate the integrity standards at Bellarmine.

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- While in the lab, students should be entirely focused on the task at hand, or actively seeking out more work. Students spending time on their phones, playing video games, or who are otherwise distracted or engaged in unsafe behavior may have their build hours canceled, be temporarily suspended, or be dismissed from the team.

Bellarmino Robotics expects that all members behave maturely and professionally at all times and comply with the standards of Bellarmino College Preparatory. Members whose behavior is below the standards of the team will face disciplinary action or dismissal from the team.

It is important that all team members remember that whenever they are engaged in a team-related activity, whether online or in person, they are representing Bellarmino College Preparatory and The Cheesy Poofs. Their actions will reflect upon the team, the school and our sponsors. Team members should treat their teammates, mentors, faculty advisors, members of other teams, and the general public with kindness and respect at all times.

At competition, those who are not members of Bellarmino's robotics teams but are cheering for or representing the team in any way, such as parents and friends, must adhere to these guidelines as well.

Not following the expectations and requirements outlined above, or failure to, can result in a JUG, a temporary suspension from robotics activities, or removal from the team.

Team Dues

Team dues are \$300 per member per year to help offset the costs associated with the robotics program. This non-refundable fee is paid online when completing the student contracts.

Team Participation

Team Meetings

Whole team meetings are held weekly at 2:54 pm on Tuesdays in the Robotics Lab and it is mandatory that members attend these meetings.

Other project groups and sub-teams will also have meetings as announced. Certain meetings will be declared "Critical Meetings" as a prerequisite for attending competitions or other events.

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Mandatory Events

During the year, team members are also required to attend the following events:

- Mandatory 2023-2024 All Team Meeting – After announcement of the team roster
- FTC Kickoff - Early September (FTC Team only)
- Chezy Champs FRC Tournament - Volunteer or Participant
- FRC Kickoff – Beginning of January (FRC team only)

The team leadership may announce other mandatory events during the year. Students who cannot attend a mandatory event should speak with a team mentor or faculty advisor at least one week in advance of that event.

Communication

All members are required to have an active email address that is registered with the team. They must also check emails sent to this address daily. Messages will be communicated to members through Microsoft Teams, Blue, Slack, emails, meetings, and blogs.

Team Website

The team website is located at www.team254.com. All members must create a website account with the team. Members must also have at least one parent create an account on the team website to receive important parent-specific communications.

Email Group

When a parent or member creates an account on the team website, that member will be added to the team mailing list and will begin receiving email updates from the team. Only students and parents who are registered on the website will receive team emails. Failure to check email is not an excuse to miss required activities or deadlines.

Slack

Members are required to join the team's Slack workspace at team254.slack.com. Accounts are created for each student as soon as they join the team. Slack is available as both a desktop and mobile app. Team announcements, group chats, and private messaging are all available through Slack, so it's a vital tool for team

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communication. Failure to check Slack is not an excuse to miss required activities or deadlines.

Team Blog

The team maintains a blog on the team website that members are required to check throughout the FRC & FTC seasons. Please read the blog before messaging a student leader for more information regarding build progress, tournaments, or anything else that may have been featured on the blog. Failure to read the blog is not an excuse to miss required activities or deadlines.

Identity

The Cheesy Poofs team is well known throughout the robotics community and has a very distinct identity associated with it.

Identity Standards

The team has developed a set of comprehensive identity standards to help maintain and preserve our strong team identity. The policies outlined in the identity standards are binding and must be followed for all team appearances and communication. For more information, see the Identity Standards posted on the team website. Note: These standards will evolve as we incorporate our new FTC teams for the 2023-2024 season.

Dress Code

The dress code must be maintained at competition, all off-season events, and robot demonstrations. Maintaining the dress code is encouraged on the school days before and after a robotics competition in order to raise awareness at school. For more detailed information, see the Identity Standards.

Photography and Media

All members must be willing to be photographed and appear in team-related publications. Members are encouraged to teach and attend skill building workshops for the team. Mandatory workshops may also be held for students on the media sub-team in order to introduce members to sub-team specific skill sets.

When appearing in team photos or videos, team members must refrain from using hand signs or other gestures since these may be offensive to others.

Outreach

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The team participates in numerous demonstrations and other outreach events throughout the year. This is an important way to interact with and enrich the community while also spreading our message and brand. Attendance at outreach events is open to anyone on the team. The Outreach subteam and team leaders are required to support Outreach events. Outreach events count toward team participation hours.

Submissions & Publications

To maintain the team's high standards of quality and imagery, the leadership team, including faculty advisors and mentors, must approve any documents or media pertaining to the team prior to their release. This includes award submissions, publicity materials, news articles, pictures, videos, posts to social media, discussion forums, and the website.

Confidentiality

Bellarmino robotics has a long tradition of competitive excellence and being a source of inspiration and mentorship for other teams. The team shares ideas and design concepts with other teams and offers help to anyone who asks for it. However, the team believes that helping others work through the engineering process is much more effective than giving away fully-formed solutions and designs.

Members are not permitted to disclose any ideas, designs, documents, photos, or videos to anyone not affiliated with The Cheesy Poofs without the explicit approval of the leadership team. Confidentiality is taken very seriously and disciplinary action will be taken when a member fails to maintain the team's trust.

Facilities & Safety

Bellarmino Robotics Lab

The Bellarmino Robotics Lab serves as the primary workplace for all robotics activity on the team. The Robotics Lab is located on Bellarmino's campus next to the Sobrato Theater and the track. The lab complex features a workspace area, a machine shop, a full sized FTC field, a 70% size FRC field, and outdoor storage.

Rules & Guidelines for the Robotics Lab

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All members must complete lab safety training and basic tool training, and turn in a signed lab safety contract. Members must follow all rules outlined in the safety training including (but not limited to) those listed below.

- No member can work in the lab without a mentor or faculty advisor on site. A mentor or faculty advisor must be in the machine shop when any machine tools are in use.
- Food and drink are not allowed inside team facilities.
- When a member is finished using a tool, it must be returned to its designated location in the lab. At the end of every work session, all tools and materials must be put away. The cleanup checklists should be followed at the end of each build.
- If a member leaves before a build session is over, that member must clean for at least fifteen minutes before leaving. Members must speak to a mentor when they begin cleanup if leaving early.
- Members are not allowed to leave the lab before notifying and signing out with a mentor or faculty advisor.
- For safety, if a member needs to leave the lab after dark to go to another part of campus, they must be accompanied by another student, or a mentor or faculty advisor.
- If a power tool malfunctions or breaks, it must be reported to a mentor or faculty advisor immediately.
- Electrical devices of any kind may never be powered by daisy-chaining cords or power strips.
- Always wear safety glasses and other pertinent safety equipment when operating power equipment or when near somebody who is operating power equipment.
- Loose hair and long or loose clothing must either be tied back or removed before a member is permitted to use any machine tools. Close-toed shoes must be worn in the lab
- Members must partake in a robotics related activity if they are in the lab. If a member is not participating during a work session they will be asked to leave the lab. Horseplay and games will not be tolerated.

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- Members may not remove any equipment or material from the robotics lab for use at another location, including home use.
- Faculty advisors and mentors always have the final word in any situation where safety is at stake.
- All applicable rules of Bellarmino College Preparatory apply at any location where robotics work is taking place.

Failure to comply with the established robotics lab safety rules will result in disciplinary action.

Travel & Competition

Eligibility

Eligibility for overnight robotics tournaments is determined by the faculty advisors & mentors. They review a member's participation, skills and contributions throughout the semester. All members are encouraged to attend local tournaments.

Payment

Certain competitions require travel which will require payment from members for airfare, hotels, buses, meals, etc. If cost is an issue, please speak with a faculty advisor regarding financial assistance.

Members who withdraw from a travel tournament will only be refunded if another member takes their spot.

Roles & Responsibilities

Prior to competition, members will be divided into roles needed for the particular tournament, such as drivers, pit crew, scouts, strategy, alliance readiness, videography, etc. It is vital to the success of the team that members maintain the roles that they are given.

When at competition, members are encouraged to watch matches, meet other people, and look at other team's robots. members are not permitted to engage in unrelated activities without express permission from a mentor.

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Behavior

Behavior that is deemed below the standards of the team or the school will result in disciplinary action. Severe infractions may result in an immediate flight or bus trip home at the expense of the team member, and/or dismissal from the team.

Transportation

Local Events

Events within Santa Clara county may not have transportation scheduled by the team. For these events, it is the member's responsibility to arrange transportation.

Travel Tournaments

For events outside of the local area, Bellarmine will arrange all transportation, accommodation and meals (as required) to and from the tournament. Members are responsible for the travel costs and will be billed directly by Bellarmine. Team members may be required to arrange their own transportation to the airport.

Members who withdraw from a travel tournament will only be refunded if another member takes their spot. Students on financial aid will get assistance to pay for the travel costs, however, if they cancel, they must pay any cancellation fees.

All student members participating in a travel tournament must travel with the team.

Members must sign up in advance for all travel tournaments.

School Absences

If a member will miss school due to a robotics event, it is that member's responsibility to inform teachers of an absence at least one full week ahead of time and arrange for completion of missed work.

If a student misses school due to illness, they may not attend any robotics activities later that day.

Students may not miss school after the day after a tournament due to fatigue or postponed homework. Any such absences will be unexcused.

Team Leadership

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The Cheesy Poofs team is managed by a leadership team consisting of student leaders, adult mentors, and faculty advisors. The leadership team's duties go beyond those of regular members. This team makes administrative decisions, plans events, and manages projects. Every member of the leadership team puts in hundreds of hours of work behind the scenes to ensure that the team operates smoothly.

Leadership Meetings

The leadership team meets year-round, typically weekly. Leadership meeting attendance is restricted to the leadership team, but the meeting minutes will be publicly available to team members. However, students are encouraged to approach the leadership team with any and all relevant concerns.

Leadership Team Selection

At the end of each school year, a selection committee consisting of mentors and faculty advisors will choose next year's leadership team. The selection process is based on previous leadership experience, dedication, expertise, and a written application. Leadership roles are updated as needed and published every year. Any team member may apply to be a team leader.

Leadership Roles & Responsibilities

Team President

The team president is responsible for keeping team unity, making sure the leadership team functions as designed, running all team meetings, and being a team spokesperson.

Program Management Director

This leader oversees the FRC build schedule and daily build tasks as well as allocating team resources to ensure progress and timeliness for all subsystems

FRC Technical Director

This leader oversees the overall robot design process and technical aspects of FRC as well as organizing workshops and ensuring that team members are adequately prepared for the season.

FRC Technical Lead

This leader oversees the design process concerning one or more particular subsystems of the robot. The FRC Technical Lead reports to the FRC Technical Director and assists in

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organizing workshops and ensuring that team members are prepared for the season. There may be one or more Technical Leads selected each year.

FRC Competitions & Operations Director

This leader is responsible for FRC competition preparation including scouting, pit construction, and FRC team member participation at tournaments.

FTC Technical Lead

This leader is responsible for organizing FTC build related activities, managing and organizing FTC individual team leaders, and ensuring members get the most out of the technical aspects of FTC.

FTC Competition & Operations Director

This leader is responsible for FTC competition preparation across all FTC teams, including scouting, pit construction, and FTC team member participation at tournaments.

Software Director

This leader is responsible for the programming and electronic functions of FRC and FTC robots as well as maintaining team web apps and scouting platforms.

Software Tech Lead

This role works with the software director to provide technical leadership on the organization of software team projects, educate and involve new members, and maintain the team's FRC & FTC codebases.

Media Director

This leader and his sub-team create all publicity and robot related media, including merchandise, and maintain the team's Identity Standards.

Business Director

This leader and their sub-team are responsible for the creation and archiving of all written team content such as blogs and award submissions, as well as securing and managing finances for the team.

Outreach & PR Director

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This leader and their sub-team are responsible for coordinating and organizing appearances at outreach events, as well as maintaining and improving the team image, identity, and presence through social media.

Contacting Leaders

Leaders, faculty advisors and mentors can be reached by messaging them through Slack or sending email to them by referring to the contacts listed on the leaders and mentors pages on the team's website.

Sub-teams

Many leadership roles include management of a sub-team of students who work with the leader on team projects. Students are assigned to a sub-team based on their application preferences. They will have obligations to this primary sub-team and be responsible for completing action items delegated to them. In addition, students are encouraged to join and participate in additional sub-teams, as long as they fulfill their obligations to their primary sub-team.

Authority of the Handbook

The rules and policies set forth in this handbook are binding and must be followed by all team members. The handbook may contain appendices including the Team Identity Standards. These documents are binding as well. The leadership team has the authority to modify this handbook at any time. Team members will be notified of any modifications.