



# FRC Team 1732 Hilltopper Robotics

Team Handbook 2022-2023

*"The hardest fun you'll ever have!"*

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# Section 1: Introduction

## 1.1: What is FIRST?

*FIRST* (For Inspiration and Recognition of Science and Technology) was founded in 1989 to inspire young people's interest and participation in science and technology. Based in Manchester, NH, the 501(c)3 not-for-profit public charity designs accessible, innovative programs that motivate young people to pursue education and career opportunities in science, technology, engineering, and math, while building self-confidence, knowledge, and life skills.

Almost four thousand teams worldwide compose the FIRST Robotics Competition (FRC). An annual FRC game is released that combines the excitement of sport with the rigors of science and technology, producing the ultimate Sport for the Mind. Under strict rules, limited resources, and an intense six-week time limit, teams of students are challenged to raise funds, design a team "brand," hone teamwork skills, and build and program industrial-size robots to play a difficult field game against like-minded competitors. It's as close to real-world engineering as a student can get. Volunteer professional mentors lend their time and talents to guide each team.

"Gracious Professionalism" and "Coopertition" are part of the ethos of FIRST. They are ways of doing things that encourage high-quality work, emphasize the value of others, and respect individuals and the community. With Gracious Professionalism and Coopertition, fierce competition and mutual gain are not separate notions. Students learn and compete like crazy, but treat one another with respect and kindness in the process. Teams help and cooperate with each other even as they compete.

## 1.2: About Hilltopper Robotics

Team 1732 Hilltopper Robotics is a FIRST Robotics Competition (FRC) team composed of students, parents, volunteers, mentors, and moderators from both Marquette University High School (MUHS) and Divine Savior Holy Angels High School (DSHA).

### 1.2.1: Mission Statement

The mission of Team 1732 is to:

- provide growth through meaningful, educational, life-changing experiences as students learn new hard and soft skills through robotics team activities
- act as a vehicle for modeling the mission and core values of DSHA, MUHS and FIRST
- achieve excellence (individually and collectively) in competition as well as making a meaningful impact in our community.

## 1.2.2: Team History

Working out of a small closet at MUHS, Hilltopper Robotics was founded in the Fall of 2005 and focused on design and build strategies for FRC and VEX robotics. In 2008, the team extended its reach further to include both MUHS and DSHA students. Today MUHS and DSHA students collaborate together in the O'Rourke Robotics Center at MUHS. Notable events and accomplishments include:

2005 Winner, Milwaukee VEX Competition

2006 1732 began competing in the FIRST Robotics Competition

2007 Curie Division Finalist, FIRST Championship

2008 1732 began collaboration with DSHA

Woodie Flowers Finalist Award, Wisconsin Regional: John Wanninger

2010 Winner, Wisconsin Regional

Winner, Midwest Regional

Woodie Flowers Finalist Award, Midwest Regional: Scott Keller

FIRST Dean's List Finalist Award, Midwest Regional: Justin Chan

2011 FIRST Dean's List Finalist Award, Midwest Regional: Will Pierson

2012 Regional Chairman's Award, Boilermaker Regional

FIRST Dean's List Finalist Award, Boilermaker Regional: Katie Bitter

2013 Winner, Wisconsin Regional

Engineering Inspiration Award, Wisconsin Regional

2014 Regional Chairman's Award, Midwest Regional

Regional Finalist, Midwest Regional

Winner, Wisconsin Regional

2016 Team 1732 moved into the new O'Rourke Robotics Center at MUHS

2017 Winner, St. Louis Regional

Winner, Wisconsin Regional

2019 Judge's Award, Northern Lights Regional

Autonomous Award, Iowa Regional

2020 Finalist Captain, Midwest Regional (qualified for FIRST Championship which was canceled due to COVID-19)

2021 FIRST Dean's List Finalist Award, Wisconsin Regional: Isabella Schweitzer

2022 Winner, Lake Superior Regional (1st Seed Alliance Captain)

FIRST Dean's List Finalist Award, Wisconsin Regional: Miles Menos

Regional Finalist, Wisconsin Regional (1st Seed Alliance Captain)

Regional Finalist, Midwest Regional (2nd Seed Alliance Captain)

3x Regional Excellence in Engineering Award Winner

Team 1732 has also had major success in offseason competitions, winning MARC (Michigan Advanced Robotics Competition) in 2007, 2011, 2013, and 2017. Team 1732 has also been invited to the most prestigious offseason tournament, the IRI (Indiana Robotics Invitational) on multiple occasions - in 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2017, and 2022; and in 2022 was the winner of WVROX 26hr 14 min Extreme Endurance Event.

### **1.2.3: What We Do**

Team 1732 members participate in the FIRST Robotics Competition (FRC). Working side by side with mentors, students design and build advanced robots for regional competitions. After the game is revealed, teams get to work designing their robot using computer-aided design programs and metalworking equipment. Over the course of an intensive build season that spans 6-8 weeks, the team builds 1-2 robots for use at our regional competitions.

Team 1732 typically attends two or three regional competitions and the FIRST Championship, pending qualification. One regional is usually held in Milwaukee, the others within 6 to 8-hour drive from Milwaukee, and the FIRST Championship (held in Houston, Tx).

After the robotics season is over, Team 1732 continues to compete in various offseason tournaments during the Summer and Fall, often including MARC (Michigan Advanced Robotics Competition), IRI (Indiana Robotics Invitational), and R2OC (Rockford Robotics Offseason Competition).

Team 1732 is also involved in community outreach programs, such as the FIRST Lego League (FLL) tournament the team hosts, visits to libraries/schools, participation in community STEM activities, most recently working closely with students at Messmer St. Rose school, located in the MUHS neighborhood.

### **1.2.4: Why Participate in FIRST Robotics**

Team 1732 is always looking for new students in all grade levels. The team fosters technical skill development in the areas of mechanical design, manufacturing, electrical engineering, programming, marketing and business management. In addition to technical skills, the team fosters “soft” skills such as planning, presenting, critical thinking, time management, teamwork, and leadership. Our year-round activities integrate training into our projects, allowing all students to learn the skills required to become a valuable member of the team.

Students who join FIRST robotics programs gain access to over \$50 million in college scholarships made available by colleges, universities, and corporations who support FIRST. This is exclusive financial help open only to FIRST team members, giving them a competitive edge over other students seeking funds to support their post-secondary education. About 35% of scholarships can be used for any course of study, not just engineering. Awards range from one-time awards to full four-year tuition.

## **Section 2: Team Structure and Procedures**

### **2.1: Student Application Process**

Being a member of Team 1732 is a privilege, not a right. Each year students are required to apply to be a part of Team 1732. Applications will be judged based on past performance, student availability, student interest, and team need. Team spots are earned and maintained through dedication and active contributions to the team. For the 2022-23 season, students will be evaluated based on performance and interest during fall term as well as meeting certain expectations including:

- Attending Info Meeting with parent/guardian
- Complete Permission Form which includes Slack Usage Agreement
- Attend at least five build meetings in-person
- Attend one Community Outreach Event
- Volunteer at the FLL Tournament at MUHS in November
- Complete Team 1732 online application including info for at least one possible team sponsor
- Register with FIRST ([www.firstinspires.org](http://www.firstinspires.org)) including parent consent
- Other activities supporting the team

### **2.2: Leadership Structure**

While it has changed over the years, the current leadership structure consists of student leaders for the full-time and part-time subteams, with those leads and mentors serving on the Cortex Committee. Subteam leaders are responsible for organizing and running subteam meetings, and some may have specific roles within their subteam, like focusing on a specific skill set or subsystem. The Cortex Committee helps to make executive decisions, like planning, scheduling and running team meetings and events, as well as working on short-term problem solving and long-term team improvement.

MUHS annually appoints a Director of Robotics and Assistant Directors who act as the Team liaison to MUHS school administration. The Director coordinates the Cortex Committee along with the Robotics Moderators from DSHA and MUHS.

### **2.3: Main Subteams**

Team 1732 has several main subteams; most students will have a subteam assignment for one of these. Students in their main subteam are expected to complete training related to that subteam. The main subteams of the Hilltopper Robotics are defined as follows:

### **2.3.1: Design**

The Design subteam uses Autodesk Inventor to model the robot in 3D, create a detailed design, and produce drawings used by the Mechanical subteam for part fabrication. This subteam also helps design prototypes and iterate on parts of the robot that are already built. Design also creates the files for our various computer aided manufacturing processes.

### **2.3.2: Electrical**

The Electrical subteam designs the robot's electrical system with the Design subteam, and then connects and manages the power, control, and communications systems on the robots, including battery power distribution and motor controls. It works with both the Programming and Mechanical subteams to figure out communication systems and fabricate parts related to the electronics.

### **2.3.3: Mechanical**

The Mechanical subteam is responsible for all the mechanical components of the robot. It prototypes potential robot designs, uses CAD drawings to fabricate parts for the drivetrain and robot mechanisms, and repairs the robot. It works with power tools to complete these tasks and document robot progress. It also constructs the wooden field elements required for the current season's FRC game as well as builds the robot's bumpers, develops the pit layout, and builds robot/pit supplements.

### **2.3.4: Programming**

The programming subteam writes the code that controls the robot. The code is written in Java, and shared via Github. Sensors such as encoders, cameras, and gyroscopes are used to provide automatic feedback to the robot, especially during the autonomous part of the match.

Members of the programming subteam will be taught Java and how to use Github. Members will spend their time writing and testing the code for the robot.

### **2.3.5 Spirit & Communications**

Spirit & Communications advances our team identity and builds enthusiasm within Hilltopper Robotics and into the community beyond. It promotes team spirit by coordinating our communications through our website and social media (including photography and videography) as well as helping us build a successful robot and make it to tournaments through an annual fund-raising campaign.

They lead cheers at tournaments, coordinate team events and organize the spirit wear store. They lead the submission efforts for Regional FIRST Impact Award, Woodie Flowers Award and other FIRST awards. Submissions typically involve writing an essay, presenting before a judge panel and/or creating a video. This subteam is also responsible for team logos, spirit wear clothing design, and team spirit during our tournaments.

## **2.4: Part-time Subteams**

The work of part-time subteams is vital to the team's success, but often requires meeting less frequently. Currently there is one part-time subteam that team members can join.

### **2.4.1: Strategy**

The Strategy subteam typically meets once per week during the build season to analyze the game, understand the rules, and develop a scouting system. Before each competition, members review match footage and collect data on attending teams. They aid in pre-match strategy and playoff alliance selection. This subteam also organizes the groups of scouts at competitions (See 2.5.1).

## **2.5: Other Team Roles**

### **2.5.1: Scouting**

This group is typically composed of Strategy subteam members along with any other interested students. Scouting takes place at competition events and includes pre-competition research of attending teams. During competition events, this group is responsible for collecting and organizing robot and match data. Most members of the team are expected to help with scouting at events.

### **2.5.2: Drive Team**

The Drive Team is responsible for robot operation at competition and is made up of four positions as outlined below:

- Driver: Drives the robot on the game field; controls a few other functions
- Operator: Controls robot manipulators and other functions while assisting in match strategy
- Human Player: Interacts with game elements to assist robots
- Technician: Helps carry the robot and drivers to the field and prepare for the match
- Field Coach: Typically, a mentor who directs the drive team through a continuously evolving, adaptive strategy while monitoring the time, score, and other robots.

Students are selected to be part of the Drive team by the mentors based on participation, experience, skill and ability to carry out required responsibilities. There will be tryouts for drivers before the first competition in order to allow time for practice.

### **2.5.3: Project Manager**

Project Manager may be designated for special projects or tasks at the discretion of mentors as

the need arises. These positions are used both to designate authority amongst senior team members and as a stepping stone to teach new members to take on leadership roles. A few examples:

- CNC PM
- Summer Camp PM
- Safety/First Aid PM

## **2.6: Community Activities**

Community Activities is an integral part of the team. It is critical to the team's community involvement, and accomplishing the missions of the team, FIRST, as well as MUHS and DSHA. If Community Activities were considered a subteam, everyone would be on this subteam - it is the "all-team subteam."

The Community Activity leadership team is composed of two or more subteam leaders and several adult mentors that direct our various community activity events.

A key component of our outreach to the wider community is our annual FIRST Lego League (FLL) tournament hosted by Team 1732 held at MUHS. This tournament is the largest in the state and is the team's largest outreach effort. Students, along with one parent, guardian, or responsible adult, are required to volunteer for this event for at least one four hour shift.

In addition to volunteering at our FLL tournaments, students must participate in at least one community activity event to receive competition travel priority. Community outreach events will be posted for students to sign-up.

## **2.7: Seasons of the Year**

### **2.7.1: Fall Training**

Veteran team members continue to meet occasionally after the final off-season competition to fix the robot (as it will be needed for outreach events in the Fall including Open Houses) and complete other tasks. After school starts and the Information Meetings and subteam fairs take place, build meetings begin giving new students and veterans alike the chance to learn more about our tools and processes. During this time, there are many community activities events, sponsorships are sought, our FLL tournament takes place, student's application to the team will be submitted and students will be selected to join the team and be placed onto various subteams. In addition, a Mock Kick-Off event will take place which closely imitates the FIRST FRC kickoff in January.

### **2.7.2: Build Season**

The Build Season generally begins the first Saturday of January (when the new FRC game is announced) and runs until the first tournament. During this time, Team 1732 learns the rules, prototypes and iterates various mechanisms, designs the robot, and builds the competition and prototype robots. Due to the short build season, student attendance and effort during this time

period is paramount to a successful season.

It is important to note that while everyone's ideas are encouraged and considered, all final decisions regarding robot design are made by the lead technical mentor. While he/she is encouraged to reach consensus with all students and mentors, this is not always possible.

### **2.7.3: Competition Season**

This season runs from our first tournament until the end of our scheduled regional tournaments, or hopefully through the World Championships. During this time, work on the robots continues along with preparing for and traveling to various FRC tournaments.

### **2.7.4: Off-Season**

The off-season begins after the World Championship (April), and runs through summer vacation until the start of the following school year. There are typically several off-season tournaments we attend with our previous season robot. This is the ideal time for younger members of the team to try out new roles and responsibilities in preparation for the seniors leaving for college.

## **2.8: Mentors**

Mentors are adult volunteers who donate a great deal of their time and effort to help students on Team 1732. Mentors help with team organization, provide technical support, and support students in all aspects of running an effective team. Being a FIRST mentor requires dedication and a significant time commitment. Our team mentors work extensively with team members during the build and competition seasons, designing, building and fabricating a functional robot for competition as well as preparing for our tournaments. Their experience is the catalyst for the team's and students' success.

Mentors engage and inspire students in ways far beyond science and technology. They enable both students and adults to appreciate the value of sportsmanship, teamwork, and Gracious Professionalism.

The following are expectations of all Team 1732 mentors:

- Be over the age of 18
- Be a high school graduate
- Prioritize the safety and wellbeing of the students above all else
- Follow the MUHS and DSHA Codes of Conduct
- Follow the *FIRST Youth Protection Program (FYPP)* Code of Conduct
- Complete an annual background check
- Complete the MUHS Driver Registration once every 3 years to be able to transport students
- Complete the Archdiocese of Milwaukee's *Safeguarding All of God's Family* training every 5 years
- Maintain a professional relationship with students by limiting contact on social media until after they have graduated.

## 2.9: Team Decision-Making

Team decisions are made and enforced by the Cortex Committee, a group of mentors and student subteam leaders responsible for the general direction of the team.

- Decisions will be made by consensus whenever possible, with consideration given to all reasonable arguments presented in person at a meeting or that were submitted in the proper manner. Naturally, those with more experience, are most connected/impacted by the issue under consideration will have greater influence in the decision-making process.
- For general Team decisions the Robotics Director will have the final say when a consensus cannot be obtained and always when the decision is bound by school policy.
- For technical/competition related decisions (robot design/build/repair/modify, field elements, tournament prep) if a consensus cannot be obtained, the Lead Technical Mentor will make the final decision.

Students, parents, and mentors should understand that while this is a learning environment, this is a competitive team and not every idea, design, or thought by a student, mentor, or parent may be acted upon and come to fruition. Team leadership will listen and respect all ideas presented, but not all will be put into practice.

Based on time, funding, and other resource constraints, as well as the dynamics of the challenge, some decisions may have to be made by the leaders and mentors since the team has limited time to build a robot that successfully plays the game.

At all times, the Robotics Director and Lead Technical Mentor are responsible for ensuring that all decisions (including, but not limited to: robot design, student participation levels, and work group makeup) are made in the best interest of the majority of students and the team.

## Section 3: Member and Team Expectations

### 3.1: Enjoy yourself!

This is a competitive team, but that does not mean we do not know how to have fun! If team members follow the rules of the team, the rules of MUHS and DSHA respectively and demonstrate the values of Gracious Professionalism, there will be no problems. After all, everyone is here to experience science, technology, and teamwork in a positive and fun environment.

### 3.2: Communication

The Team has made a significant investment in a subscription to an internal team communication system called Slack. All team members are required to maintain an active Slack account on: <https://team1732.slack.com>, through their school email (for students). **They must check it daily**, especially during the build season, which can easily be done by mobile app, desktop app, or through a web browser. Messages will be communicated via Slack and during team meetings. Team announcements, group chats, and private messaging are all available through Slack, so it is a vital tool for team communication. Team members will be subscribed to an all-team announcements channel along with their subteam specific channels. Team members will also use Slack for communication during team competitions.

Slack usage will be periodically checked by mentors to note inactivity, which can jeopardize chances for travel with the team.

Communication to parents is usually done through email, and parents are expected to check their email periodically to keep up to date on deadlines, permission slips and other important information. Parents joining the team as a chaperone or a mentor are required to create a Slack account for easy communication with mentors and other team leaders. Completing a Slack Usage Agreement is part of the team join requirements.

### 3.3: Varsity Requirements

Team members have the opportunity to earn a Varsity Letter. Requirements are

- Meet all Join Requirements
- Participate at 11/29 Full Team Meeting
- Actively participate in Jan 7 Kick-Off Meeting
- Attend and actively contribute in Build meetings Offseason: 2 evenings/week. Build Season: 3 evenings + full Saturday
- No unexcused absences
- Actively participate in all local Tournaments and at least 1 travel tournament
- Significant Contribution to the team (Including but not limited to Lead, Drive Team, Project Manager)

## **3.4: Academic and Other Requirements**

### **3.4.1 Academic**

Each student is required to meet their school's minimum academic requirement to participate on the robotics team. A student's academic well-being takes precedence over their participation on the robotics team. If a student feels that their school performance is being too negatively affected by their participation on the robotics team, they are expected to bring this to the attention of the mentor in charge of their subteam, or the Robotics Director.

### **3.4.2 Behavioral**

Other behavioral requirements for participation in extracurricular activities such as Robotics also exist per school policies. In summary, if a student is placed on academic or other probation, this will also prevent them from participating in robotics activities until the issues with their school are resolved. Here are links to the school policies that team members should be familiar with:

MUHS: <https://www.muhs.edu/student-life/student-handbook>

DSHA:

[https://dsha.myschoolapp.com/ftpimages/1051/download/download\\_7839276.pdf?bblinkid=262531226&bbemailid=41717409&bbejrid=-1871988773](https://dsha.myschoolapp.com/ftpimages/1051/download/download_7839276.pdf?bblinkid=262531226&bbemailid=41717409&bbejrid=-1871988773)

### **3.4.3 Dress Code**

In keeping with Dress Code policies of our schools and in the spirit of inclusion which Team 1732 and FIRST promotes, clothing items, including masks, containing business or product advertisements (other than Team 1732 sponsor shirts) or political messaging of any type may not be worn at any Team 1732 activity.

## **3.5: Participation**

Team members should plan on participating in all group activities, barring extenuating circumstances. The team's goal is to create an atmosphere of teamwork, cooperation and dedication. Competitions, volunteering, and fundraising are all essential to becoming deeply involved with the team and learning and sharing in the team's mission.

In addition to participation in team activities, in order to be a great team, work must be done between meetings. Attending meetings unprepared is unacceptable and will be noted by mentors and taken into consideration when various roles and responsibilities are given out.

### **3.5.1: Attendance**

Students must maintain good standing with the team to attend competitions, offseason events, and other activities. Good standing is determined by participation, attendance, and having a positive attitude. Attendance expectations may vary by subteam and time of year, but will typically be 60% of

meetings for students and 75% for subteam leaders. Attendance will be tracked and be used as a determining factor for a student’s ability to travel with the team as well as impact the opportunity to join the team next season.

Build season meetings typically take place from 6:30 - 9:00 pm on Monday-Thursday nights, and from 9:00 am - 4:00 pm on Saturdays, with a mandatory team lunch at noon. Team members attend half of Saturday, and should come from 9:00 am - 1:00 pm or 12:00 pm - 4:00 pm. Each student will have an assigned schedule and their attendance will be recorded by their subteam leader at each meeting. If unable to attend meetings, subteam leaders and subteam mentors must be informed via Slack prior to the meeting time. The team understands that other obligations may compete for students’ time, but mentors must be informed of all other commitments at the start of the school year and build a season to prevent scheduling conflicts.

| <b>Build Season -- Meeting Requirements (to be considered to travel)</b> |  |
|--|--|
| All Team Members   | Must attend at least 2 weeknight meetings & half-day Saturdays (AM or PM). |
| Varsity Team Members   | Must attend at least 3 weeknights meetings & all-day Saturday.             |

As the final competition robot will usually not be fully completed by the first competition, work must continue after that competition (repairs and improvements based on lessons learned) and participation requirements still exist in order to qualify for further tournament travel. While build season attendance requirements still exist, they may be less when a certain subteam has less work to do. Monitoring Slack communication is essential.

Students should feel that they have done something meaningful at every meeting. As subteam leaders are often busy, it is up to the student to show initiative in order to get involved and learn things that will open doors to new opportunities.

There will be several mandatory, all-team meetings and events, including fall information meetings and the FRC Kickoff in January.

### **3.6: Fundraising and Financial Obligations**

#### **3.6.1: Student Activity Fee**

The Student Activity Fee is determined at the beginning of each school year and will be based in part on the team’s success in securing sponsorships and donations as well as team size. The Student Activity Fee is set each year depending on team size, number of tournaments, and other variables. The

fee in the past has ranged from \$250 - \$400 and is collected by each respective school. **In 2022-23, the team fee is \$325 per student.** Upon approval of the student's application, the student activity fee will be billed to the student via their school.

The Student Activity Fee includes:

- Membership on the FRC team
- Attendance at various team events (community activities events, classes, fundraising events)
- Ability to travel to team competitions with the team (travel expenses are a separate fee)
- Access to team tools and equipment, once trained
- Team t-shirt for season

### 3.6.2: Student Uniform Fee

Rookies will be assessed a one time fee (\$45) for a team polo shirt to be worn at competitions and team activities during their years on the team.

### 3.6.3: Travel Costs

Each event's travel costs are priced based on distance and other expenses, such as hotel accommodations (usually 4 students to a room). The average cost for a two-night event is about \$150-300 which includes transportation, hotel, tournament fees and food (while in competition city). If the team advances to the FIRST Championship, we anticipate the travel fees for that event will be higher due to the length of the competition. Please keep in mind that attending competitions is not mandatory, but highly encouraged.

### 3.6.4: Payment Procedures

**Fees:** Team 1732 will provide MUHS and DSHA a list of students on the robotics team and the fees they are to be billed. Fees will be billed to an individual student through his/her respective school's student account. Fees collected by DSHA through the school's student billing system will be passed along to MUHS and credited to the Robotics team.

**Travel Costs:** Any team member wanting to travel to a competition must complete a Parental Permission Form and return it to the Tournament Forms Vertical File in the Robotics Build Room by the stated deadline. The Permission Form will provide details about the trip including dates, locations, travel costs, etc. It will include a statement saying that the non-refundable travel costs will be billed through the student's school billing account. By signing the form, students are fully committing to participating in the competition. By providing signature consent, parents are agreeing to pay the travel costs as stated. Travel costs will be billed in the same manner as fees and are **non-refundable** once Parental Permission Forms are signed and turned in. Team mentors will provide each school with a list of travel costs to be billed to each traveling student. DSHA will collect fees from their students and pass them along to MUHS for deposit into the Robotics Team Account. Any outstanding billed fees must be paid before being eligible to travel to a subsequent tournament.

### 3.6.5: Financial Aid

Some financial aid is available for students to help cover all or part of the Student Activity Fee and/or travel fees. Please contact your respective school contact (Ann Duffy / [duffy@dscha.info](mailto:duffy@dscha.info) at DSHA or Adrian Gardner / [gardner@muhs.edu](mailto:gardner@muhs.edu) at MUHS) for more details about obtaining

financial assistance.

### **3.6.6: Team Funding**

Running an FRC team is expensive; our budget is in excess of \$100,000. The team is funded by student activity fees, the schools and multiple sponsors. Students are **required** to assist the team in fundraising. The requirements are that each student will provide the name of at least one local community business with a contact's name and information (address, email, etc.) and write a personalized letter (based upon a provided template) to those businesses. This must be done in order to qualify for competition travel.

### **3.7: Travel Eligibility**

In order to be excused from school for offsite team activities, each student is responsible to follow the Excused Absence policies of their respective school (refer to student handbook links in Section 3.3 above).

Students who travel with the team are expected to reach the minimum fundraising, community activities, and attendance requirements. If there are more students that want to attend than spaces available (the number of spots varies by tournament), mentors for each subteam will select students that are permitted to miss school or travel with the team based on participation and competition role. Competition roles such as Drive Team, Scouting and Awards presenters receive priority when deciding which students can attend.

Team members must submit their Parental Permission Forms and any other related travel paperwork by stated due dates or risk the chance of not being able to travel.

### **3.8: Competitions & Events**

#### **3.8.1: Dress Code / Team Uniform**

Dress code for competitions and outreach events includes team shirts, safety glasses, and closed toed shoes. Students who wear inappropriate footwear are not allowed in the venue's pits and must remain in the viewing stands for the duration of the event. All team members are required to wear the appropriate team shirt at competitions. Team shirts may not be cut, altered, or modified and should not be covered up by a jacket / hoodie when at the venue out of respect for the team's image.

Team members will have three sets of team uniform shirts to wear during competition. Typically, on Thursdays, team members will wear a team or school shirt. On Fridays, the current season's team t-shirt and on Saturdays, members will wear team polos.

#### **3.8.2: During Competitions & Team Events**

At competitions and team events, all students are expected to represent our team, schools, sponsors, and city. Students are expected to give full effort to assigned duties, including Drive Team, Pit Crew, Scouting, and in general helping out as requested.

Students may not use electronic devices, including but not limited to laptops, tablets, and mobile phones, to play video games or other non-robotics activities during competition times except at meal times. Personal Wi-Fi hotspots interfere with robots, and are thus banned at events. Additional event rules, available in the FIRST manual and via websites for specific events, must also be followed.

During events and when traveling with the team, team members are not permitted to leave the venue/hotel without a mentor and/or chaperone with them. This rule is to help enforce safety of the team members and for accountability in the case of an emergency. The team understands that there will be certain situations where this rule cannot be enforced and requires that students ask for permission from a mentor and/or chaperone before they depart from a venue. Disciplinary actions will be taken against students that leave a venue without explicit permission from a mentor and/or chaperone including, but not limited to, dismissal from the team and/or disciplinary action from their respective school.

During regular season and off-season competitions, when the team has a match, all team members not part of the Drive Team are required to be in the viewing stands. During the match, you are expected to cheer and support our team and alliance partners. Team cheers and chants must be respectful to other teams and only be held at appropriate times.

During regular season and off-season competitions, all team members are expected to stay for the awards ceremony unless travel requirements prevent this. During the awards ceremony, team members will show Gracious Professionalism to other teams by standing and clapping when other teams are presented with awards.

During regular season and off-season competitions, all team members are expected to help clean up the viewing stands after competitions, as well as help take down the Pit. If the above requests are not completed, mentors have the right to suspend team members from future events.

At regular season and off-season competitions, those who are not members of Team 1732, but are cheering for or representing the team in any way, such as parents and friends, must adhere to these guidelines as well.

### **3.8.3: At the Hotel / Lodging Location**

Often, the team will stay at hotels for overnight events. In these cases, students must adhere to the hotel's policies and regulations. Students are prohibited from using the swimming pool or exercise center without prior approval by mentors or chaperones. Students are not allowed to leave the hotel without a mentor or chaperone or with their explicit permission. Students who have permission to leave the hotel must be in a group of 3+ or with mentor or chaperone supervision.

Students will have a clearly stated curfew and "lights out" times, and are expected to follow these rules. Male and female students will never share a room, and will not enter rooms of any student of the opposite gender or the room of a mentor. This is to prevent inappropriate behavior and protect students from possible accusations of inappropriate behavior.

Students are expected to be respectful to the hotel staff and other members of the public staying at the hotel. Failure to comply will result in the student being sent home from competition. The hotels where the team stays are generous enough to accommodate a team of our size and they reserve the right to remove individuals or the entire team should the need arise. If a situation is deemed serious enough, a hotel may prevent the team from staying in the future. Please help the parents, mentors and chaperones on trips by being a role model to others and a shining example of both your school and of FIRST.

### **3.9: Acceptable Behavior**

#### **3.9.1: Safety**

While participating in Team 1732 robotics, your safety and the safety of those around you is the top priority. Most injuries at robotics come from not knowing how to use or misusing a tool. The workshop and all tools should not be used without the permission of a team mentor. No student should use a tool without prior training, even if they've used similar equipment outside of the team.

Students must always wear safety glasses in the build room, or when working on or near an FRC Robot or using machining tools.

Students should report any injuries that happen at robotics to a team mentor. Depending on the severity of the injury, it may need to be reported to the school for insurance purposes. Do not try to hide or cover up an injury that happened at robotics.

Policies and procedures related to COVID safety must be followed at all times. School policies may change as the pandemic changes. Current school policies will apply to all Robotics events and activities.

**If a student is sick, they should stay home.** This is especially true during build season, when the team works in close quarters and spreading sickness across the team could significantly impact our ability to build the robot. Students showing any type of sickness will be asked to go home.

#### **3.9.2: Respect**

Students must conduct themselves in a respectable manner, consistent with MUHS and DSHA school policies and procedures and FIRST expectations. Team members not only represent MUHS and DSHA, but also the team sponsors and FIRST. Therefore, all students, parents, and mentors are expected to behave in a manner that is acceptable and expected of such standards.

Students must be respectful at all meetings. Side group conversations and phone use are not acceptable when a leader or mentor is talking, and such actions risk confiscation for the remainder of the meeting or being asked to leave. Students are encouraged to ask questions after the discussion leader finishes talking.

#### **3.9.3: Integrity**

Students are expected to have integrity. Being honest to other team members as well as the team's

mentors and not trying to cover up mistakes or errors in judgment reflect team integrity. Team 1732 understands that students make mistakes and while that is okay, students should own up to those mistakes. Being forthright and honest is always best.

### **3.9.4: Confidentiality**

Information about the current year's robot is confidential. Students should not release details (strategy, robot design, pictures, video, etc.) about the current season's robot without the consent of the team's Lead Technical Mentor. This is to build anticipation for the robot's release and maintain a competitive advantage by preventing copying before the end of build season. Releasing information can include posting to social media, posting to online forums, and emails or texts to friends on or connected with other teams.

### **3.9.5: Dating policy**

Students who choose to date others on the team are expected to leave their relationship "at the door." While at meetings and events, they should conduct themselves as normal students on the team (e.g. no PDA, holding hands, sitting on each other's laps, showing preference, or sneaking off to be alone).

### **3.9.6: Drug/alcohol/tobacco/vaping policy**

Drug/alcohol/tobacco/vaping use is not allowed at any team event. It is important that Team 1732 maintains a safe environment for everyone on the team. Using or being under the influence while at robotics puts yourself and other people in danger. Any student who is caught using or being under the influence at a team event will be dismissed from the team immediately. If the incident happens while traveling, the student will be sent home at the parent's expense, which may require a parent to come pick up the student to the competition location.

## **3.10: Parental Involvement**

Parental involvement is needed as the involvement of parents can greatly improve the experience for their students by helping our team be successful in efforts related to competition and community outreach. It also offers parents a chance to participate in a high school activity with their student and not simply hear about their robotics experience.

It is important that parents are respectful of the team and its goals, as well as its leaders, mentors and sponsors. Collectively, the team's mentors spend thousands of hours with the team and while parents may not always agree with some of the mentor's decisions, they need to trust that they have the best interests of students and the team in mind. Please bring questions and concerns to the mentors or Robotics Director as soon as they arise.

### 3.10.1: Parent Volunteering Opportunities

As a part of the student application process, there will be an opportunity for parents to sign up to help in various areas. We need every family to lend a hand and we welcome your support.

There is one requirement for parental involvement. For the past many years, Team 1732 has hosted the largest First Lego League (FLL) tournament in Wisconsin. This is not possible without the volunteer power of many people, including our team's students and parents. Each parent must volunteer a shift on either Friday, Saturday or Sunday of the tournament.

Here is a partial list of some other parent volunteer opportunities available throughout a typical year:

- Volunteering for a major role for our annual FLL tournament held each November – this is beyond the regular parent volunteer requirement detailed above! Training will be provided. Some examples are: Pit Admin, Judging Room Coordinator, Tournament Judge
- Be an Adult Team Mentor (basically, a consistent volunteer with a defined role). Mentors are needed in our technical and non-technical areas (business & communications, community activities.) \*\*SG
- Chaperoning an out-of-town tournament trip helping organize meals, bed-checks, etc. \*\*SG
- Saturday Meal Coordinators – Coordinate Saturday meals donated by parents during the build/competition season (January through April) through SignUp.com
- Weekday Meal Coordinators – Coordinate weekday meals with MUHS Dining Service during the build/competition season (January through April) using SignUp.com
- Community Activities Adult Leader – Take a small group of students to do a STEM-related activity with grade school children at local libraries/schools \*\*SG
- Chaperoning our team at the Wisconsin FRC Regional Tournament in Milwaukee in March at the UWM Panther Arena
- Helping with small projects on a finite timeline
  - Sew bumpers for the robot
  - Donating part of a Saturday meal
  - Serve as a DSHA carpool driver, transporting girls from DSHA to MUHS after school
  - Help plan the team's end-of-season banquet

Sign up as a parent volunteer here: <http://bit.ly/1732PARENT-VOLS>. If you'd like to help with the team's administrative tasks, please reach out to Marianne Stone at [team@team1732.com](mailto:team@team1732.com).

\*\*Note some volunteer opportunities are marked with SG. This indicates that Archdiocese of Milwaukee Safeguarding All of God's Family training is required. Info is online at [bit.ly/arch-safe](http://bit.ly/arch-safe).

### **3.10.2: Parents and Family Members at Competitions**

There is nothing that can explain the excitement of a FIRST FRC competition. Team 1732 encourages family members to attend competitions, both in and out of Milwaukee. Note that Team 1732 will not book travel arrangements for parents unless they are chaperoning.

If parents are planning to travel to a competition, we encourage them to let the team know. In the event the team has extra hotel rooms, bus seats, etc. the team may be able to sell those spaces to parents instead of letting them go unused.

Like student team members, parents and other family members should cheer and support our team and alliance partners. Team cheers and chants must be respectful to other teams and only held at appropriate times. During the awards ceremony, parents should show Gracious Professionalism to other teams by standing and clapping when other teams are presented with awards.

### **3.11: Self-Motivation**

Please remember that as a student, you are your own best advocate. No adult mentor or student leader will make a student do something. Robotics is a self-motivated program. If you want to learn, ask a mentor or subteam leader. If you want to work, pick up a tool or ask a leader. We will make every effort to encourage involvement by all students, but in the end, it is up to you. If you are not sure where you fit in, or are not sure of what can be done, please talk to a mentor. There is much to do between meetings as well; ask for assignments and they will be given to you if available and appropriate for your skill level. Self-motivation is what drives the Hilltopper Robotics team!

## Section 4: Team Handbook Acknowledgement

[Click here to file an electronic signature.](#) If you prefer to sign and deliver physical copy print this and the next 2 pages.

By signing below, I acknowledge that I have read, understand, and agree to abide by the team rules and code of conduct as listed in this handbook.

- I have read the handbook describing FRC Team 1732 - Hilltopper Robotics and agree to comply with the policies outlined within.
- I understand that this program requires mandatory attendance at specified events throughout the season.
- I understand that throughout the course of the season I may encounter or use power tools and other potentially dangerous equipment. I understand that during construction and support of the robot that the tools can cause serious injury if not used correctly.
- I understand that I am not permitted to use any piece of equipment until I have been instructed and trained on its proper and safe usage. I also understand that I am not permitted to use any piece of power equipment without a team mentor present in the build room that is knowledgeable of the equipment you will be utilizing. Note the CNC and lathe require a mentor directly supervising their operation.
- I agree that I will only ride to and from any Robotics event in a vehicle driven by me, an adult mentor, a faculty advisor, or a school-authorized adult unless approved by my parents in advance.
- I agree and consent to allow my photographs, name, or comments to appear in media related to FRC Team 1732 - Hilltopper Robotics.
- I understand that a violation of any of the team policies is subject to disciplinary action by the school, as well as possible dismissal from the team.

### Section 4. Team Handbook - Signed Agreement

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Student Name (Please print legibly)

Student Signature

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Student Signature Date

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Parent Name (Please print legibly)

Parent Signature

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Parent Signature Date

## Section 5: Robotics Waiver and Release Form

In consideration of the risk of injury while participating in **FIRST Team 1732 – Hilltopper Robotics** (the “Activity”), and as consideration for the right to participate in the Activity, I hereby, for myself, my heirs, executors, administrators, assigns, or personal representatives, knowingly and voluntarily enter into this waiver and release of liability and hereby waive any and all rights, claims, or causes of action of any kind whatsoever arising out of my participation in the Activity, and do hereby release and forever discharge the affiliates, managers, members, agents, attorneys, staff, volunteers, heirs, representatives, predecessors, successors and assigns of **Marquette University High School** and **Divine Savior Holy Angels High School** located at 3401 West Wisconsin Avenue, Milwaukee, WI, 53208 and 4257 N 100th St, Milwaukee, WI 53222 respectively, for any physical or psychological injury, including but not limited to illness, paralysis, death, damages, economical or emotional loss, that I may suffer as a direct result of my participation in the aforementioned Activity, including traveling to and from any event related to this Activity.

**I AM VOLUNTARILY PARTICIPATING IN THE AFOREMENTIONED ACTIVITY AND I AM PARTICIPATING IN THE ACTIVITY ENTIRELY AT MY OWN RISK. I AM AWARE OF THE RISKS ASSOCIATED WITH TRAVELING TO AND FROM AS WELL AS PARTICIPATING IN THIS ACTIVITY, WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, PHYSICAL OR PSYCHOLOGICAL INJURY, PAIN, SUFFERING, ILLNESS, DISFIGUREMENT, TEMPORARY OR PERMANENT DISABILITY (INCLUDING PARALYSIS), ECONOMICAL OR EMOTIONAL LOSS, AND DEATH. I UNDERSTAND THAT THESE INJURIES OR OUTCOMES MAY ARISE FROM MY OWN OR OTHERS’ NEGLIGENCE, CONDITIONS RELATED TO TRAVEL, OR THE CONDITION OF THE ACTIVITY LOCATION(S). NONETHELESS, I ASSUME ALL RELATED RISKS, BOTH KNOWN OR UNKNOWN TO ME OR MY PARTICIPATION IN THIS ACTIVITY, INCLUDING TRAVEL TO, FROM AND DURING THIS ACTIVITY.**

I agree to indemnify and hold harmless **FIRST Team 1732 – Hilltopper Robotics** against any and all claims, suits or actions of any kind whatsoever for liability, damages, compensation or otherwise brought by me or anyone on my behalf, including attorney’s fees and any related costs, if litigation arises pursuant to any claims made by me or by anyone else acting on my behalf. If **FIRST Team 1732 – Hilltopper Robotics** incurs any of these types of expenses, I agree to reimburse **FIRST Team 1732 – Hilltopper Robotics**.

I acknowledge that **FIRST Team 1732 – Hilltopper Robotics** and their directors, officers, volunteers, representatives, and agents are not responsible for errors, omissions, acts or failures to act of any party or entity conducting a specific event or activity on behalf of **FIRST Team 1732 – Hilltopper Robotics**.

**I ACKNOWLEDGE THAT THIS ACTIVITY MAY INVOLVE A TEST OF A PERSON’S PHYSICAL AND MENTAL LIMITS AND MAY CARRY WITH IT THE POTENTIAL FOR DEATH, SERIOUS INJURY, AND PROPERTY LOSS.** The risks may include, but are not limited to, those caused by terrain, facilities, temperature, weather, lack of hydration, condition of participants, equipment, vehicular traffic and actions of others, including but not limited to, participants, volunteers, spectators, coaches, event officials and event monitors, and/or producers of any event.

**I ACKNOWLEDGE THAT I HAVE CAREFULLY READ THIS “WAIVER AND RELEASE” AND FULLY UNDERSTAND THAT IT IS A RELEASE OF LIABILITY. I EXPRESSLY AGREE TO RELEASE AND DISCHARGE FIRST TEAM 1732 – HILLTOPPER ROBOTICS AND ALL OF ITS AFFILIATES, MANAGERS, MEMBERS, AGENTS, ATTORNEYS, STAFF, VOLUNTEERS, HEIRS, REPRESENTATIVES, PREDECESSORS, SUCCESSORS, AND ASSIGNS FROM ANY AND ALL CLAIMS OR CAUSES OF ACTION AND I AGREE TO VOLUNTARILY GIVE UP OR WAIVE ANY RIGHT THAT I OTHERWISE HAVE TO BRING A LEGAL ACTION AGAINST FIRST TEAM 1732 – HILLTOPPER ROBOTICS FOR PERSONAL INJURY OR PROPERTY DAMAGE.**

To the extent that statute or case law does not prohibit releases for negligence, this release is also for negligence on the part of **FIRST Team 1732 – Hilltopper Robotics**, its agents, and employees.

**Section 5. Waiver and Release Form - Signed Agreement**

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Student Name (Please print legibly)

Student Signature

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Student Signature Date

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Parent Name (Please print legibly)

Parent Signature

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Parent Signature Date