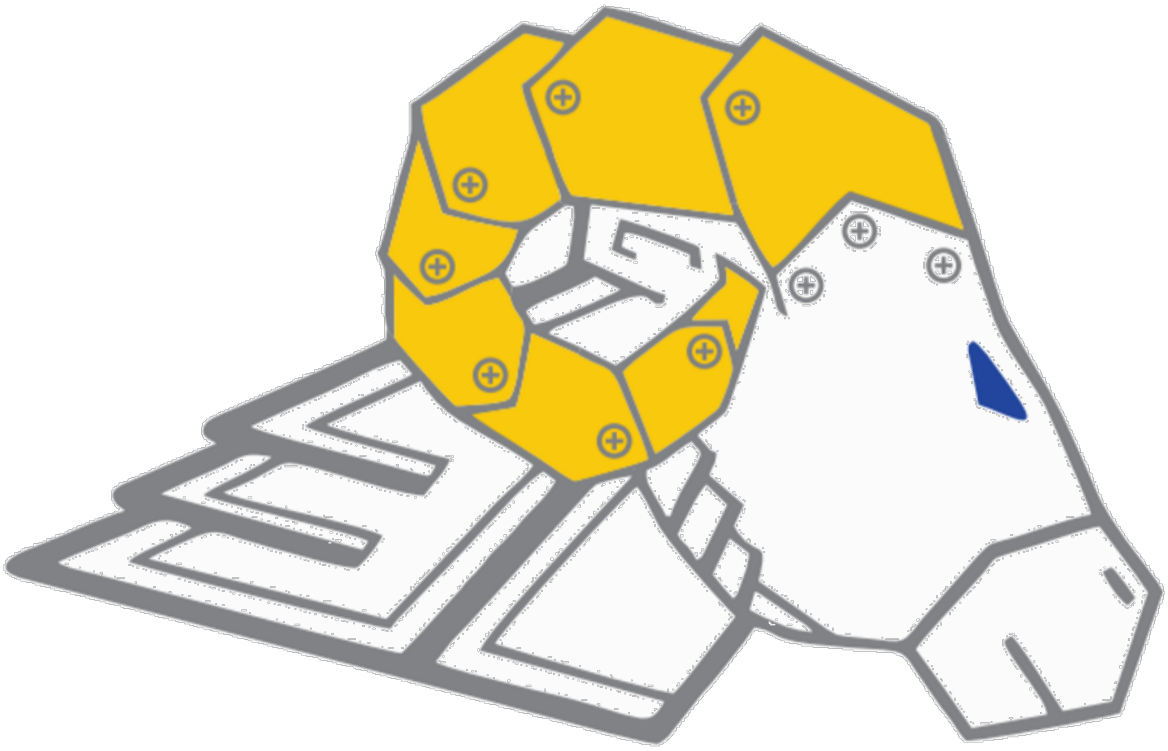

FRC Team 1732
Hilltopper Robotics

Team Handbook 2019-2020

"The hardest fun you'll ever have!"

Revised November 2019

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Section 1: Introduction

1.1: What is FIRST?

*FIRST (***F**or **I**nspiration and **R**ecognition of **S**cience and **T**echnology) 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.

More than three thousand teams worldwide comprise 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 though robotics team activities
- act as a vehicle for modelling 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
Gracious Professionalism Award, MARC Off-Season

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 and 2017.

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 and the others within 6 to 8-hour drive from Milwaukee. The FIRST Championship is typically held in Detroit, Michigan.)

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 two-day FIRST Lego League (FLL) tournament the team hosts, visits to libraries, visits to schools, and 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 to 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. Students will be evaluated based on performance and interest during fall term as well as achieving a certain number of qualifying points which are earned by participating in a variety of activities including:

- Attending an Informational Meeting with parent/guardian
- Volunteering for the MUHS FLL Tourney with a parent
- Making a Community Activities (CA) Portal account and using it to sign up for CA events
- Attending a minimum number of build and/or programming meetings
- Completing a Team 1732 online application
- Completing a Slack Usage Agreement and posting/direct messaging (DM) in Slack at least once (rookies only)
- Registering with FIRST (www.firstinspires.org) which requires parental consent
- Participating in 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 Director who act as Team liaisons to MUHS school administration. The Director leads the Cortex Committee along with a Robotics Moderator from DSHA.

2.3: Main Subteams

Team 1732 has several main subteams, and most students will be assigned to one of these. Students are expected to complete training related to that subteam. The main subteams of Hilltopper Robotics are defined as follows:

2.3.1: Business & Communications

The Business & Communications subteam produces an annual business plan, drafts and tracks the team budget, communicates with sponsors, and works with team members to fundraise and find new sponsors. We use photography, videography, our website and social media to raise awareness about our team to hopefully gain additional funding.

2.3.2: 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 iterates on parts of the robot that are already built.

2.3.3: Electrical

The Electrical subteam designs the robot electrical system layout 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.

2.3.4: 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.

2.3.5: 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.

2.3.6 Sprit & Awards

The Sprit & Awards subteam is responsible for the increasing the sense of team spirit for Team 1732. They will lead the submission efforts for Regional Chairman's 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 tournaments.

2.4: Part-time Subteams

The work of part-time subteams is vital to the team's success, but often requires less frequent meetings. 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, create the rules quiz, 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.

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.

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
- Human Player: Interacts with game elements to assist robots
- 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 driver before the first competition in order to allow time for practice.

2.5.5: Safety Captain(s)

Safety Captains are responsible for maintaining safety as a key component of Team 1732 culture. The Safety Captain should be familiar with the FRC Safety Manual, which includes the following specific recommendations for the safety captain:

- Coordinate, deliver, and track safety training for the individual team members. It is suggested that teams bring their training log to events and continue to make comments about infractions and/or continuing improvements.
- Conduct safety inspections of the general work site, especially the robot construction area. This also applies to the team's Pit during competition events.
- Be ready to informally present your safety program to Safety Advisors at competition event.

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."

There are two or more subteam leaders and leadership team that direct our various community activity events along with several mentors.

A key component of our outreach to the wider community is our annual FIRST Lego League (FLL) tournament hosted by Team 1732 and 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 day.

In addition to volunteering at our FLL tournaments, students must participate in at least two community activities events to receive competition travel priority. Community outreach events will be posted for students to sign-up on the Community Activities Portal at http://bit.ly/1732-CA.

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 take place, build meetings and programming 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 practice robots. Due to the extremely 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 though 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's robot

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
- 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 or who 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 and DSHA Moderator 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, MUHS and DSHA 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 direct 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 requirements.

3.3: Academic and Other Requirements

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. 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 policies: https://www.muhs.edu/student-life/student-handbook

DSHA policies: https://dsha.myschoolapp.com/ftpimages/1051/download/download_3647015.pdf

3.4: 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 assigned. Likewise, DWYSYWD is essential for our success. This means following up on what you committed to do in a timely manner: **D**o **W**hat **Y**ou **S**aid **Y**ou **W**ould **D**o.

3.4.1: 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. Rookie students 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 season to prevent scheduling conflicts.

Build Season -- Minimum Meeting Requirements	
Rookie Students (freshman and sophomores)	Must attend at least 2 weeknight meetings & half-day Saturdays (AM or PM).
Veterans Students & all Juniors/Seniors	Must attend at least 3 weeknights meeting & 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 the 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 Informational Meetings and the FRC Kickoff in January.

3.5: Fundraising and Financial Obligations

3.5.1: 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. 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

3.5.2: Student Uniform Fee

Rookies will be assessed a fee ($30-50) for a team polo shirt to be worn at competitions and team activities during their years on the team.

3.5.3: 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 $150-250 which includes transportation, hotel, tournament fees and food (though perhaps not food on travel days). 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.

3.5.4: 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 Smart Tuition account. Fees collected by DSHA through the school's Smart Tuition 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 Business Room by the stated deadline. The Permission Form will provide details about the trip including dates, locations, estimated 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 to be credited to the Robotics team. Any outstanding billed fees must be paid before being eligible to travel to a subsequent tournament.

3.5.5: 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 / duffya@dsha.info at DSHA or Rene Howard-Paez / howardpaez@muhs.edu at MUHS) for more details about obtaining financial assistance.

3.5.6: Team Funding

Running an FRC team is expensive; our budget this year 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 a) attend a workshop on soliciting sponsors and b) provide the names of two local community businesses and a contact's name and information (address, email, etc.) and c) write a personalized letter (based upon a provided template) to those businesses. This must be done in order to qualify for competition travel.

3.6: 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.

3.7: Competitions & Events

3.7.1: 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 venues 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.

3.7.2: 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 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.

3.7.3: 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 others 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.

3.8: Acceptable Behavior

3.8.1: 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.

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. Sick students that do attend may be asked to go home or wear a mask to reduce the spread of germs.

3.8.2: 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 device confiscation for the remainder of the meeting or being asked to leave. Students are encouraged to ask questions after the discussion leader finishes talking.

3.8.3: 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 judgement 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.

3.8.4: 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.

3.8.5: 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). Blankets are not allowed on bus rides.

3.8.6: 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 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 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.

3.9: Parental Involvement

Parental involvement is needed as it 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.

3.9.1: 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 with the volunteer power of many people, including our team's students and parents. Each parent must volunteer for either Friday, Saturday or Sunday of the tournament.

Here is a partial list of some other parent volunteer opportunities available throughout the 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 Flik Dining during the build/competition season (January through April) using SignUp.com
- Study Hall Moderator – Oversee students at MUHS from 3:00 - 6:30 pm on days when there are Build Meetings so students can do homework at school instead of going home first. (SG)
- 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 2020 Wisconsin FRC Regional Tournament in Milwaukee on Friday, March 20 and/or Saturday, March 21 at the UWM Panther Arena
- Helping with small projects on a finite timeline
  - Sew bumpers for the robot

- Assist with building our tournament field (at MUHS or our practice facility)
- Donating part of a Saturday meal
- Help plan FRC Kick-Off Weekend (including a January 4th family potluck at DSHA)
- Serve as a DSHA carpool driver, transporting girls from DSHA to MUHS after school
- Help plan the team's end-of-season banquet

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.

3.9.2: Parents and Family Members at Competitions

There is nothing that can explain the excitement of a FIRST FRC competition. Team 1732 encourages family member 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 parent 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.

3.10: 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

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 function 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 some team meetings will take place at the team's practice facility located at 525 N 22nd St., Milwaukee, WI.
- 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.

Student Name (Please print legibly)

Student Signature Date

Parent Name (Please print legibly)

Parent Signature Required Date

Section 5: 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

Student Name (Please print legibly)

Student Signature Date

Parent Name (Please print legibly)

Parent Signature Required Date