

# **FRC (FIRST Robotics Competition)**

**Team 7034: 2B Determined**

**Student Team Handbook**



Latest Revision: 2025-09-23-25



## About the handbook

This handbook contains general information as well as administrative and logistical procedures for FRC Team 7034: 2B Determined. The student leadership team and mentors update this handbook yearly to ensure that it represents the team's operations, purpose, and standards.

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# 1. ABOUT FIRST and FRC

## 1.1 What is FIRST?

FIRST (For Inspiration and Recognition of Science and Technology) is a non-profit founded in 1989 intended to inspire students to pursue further learning in STEM (science, technology, engineering, and math) fields. FIRST programs promote group collaboration and competitive integrity among a variety of age groups.

FIRST Website: <https://www.firstinspires.org/about/vision-and-mission>

## 1.2 FIRST Mission

The mission of FIRST is to inspire future science and technology leaders and innovators by engaging them in exciting mentor-based programs that build problem solving skills, inspire innovation, and foster well-rounded life capabilities including self-confidence, communication, and leadership.

## 1.3 Gracious Professionalism

As part of its mission to encourage student leadership and collaboration through annual robotics challenges, FIRST promotes Gracious Professionalism as one of its core values in all levels of competition. Their website describes this ideal as follows: “With Gracious Professionalism, fierce competition and mutual gain are not separate notions. Gracious professionals learn and compete like crazy, but treat one another with respect and kindness in the process. They avoid treating anyone like losers. No chest thumping tough talk, but no sticky-sweet platitudes either. Knowledge, competition, and empathy are comfortably blended.”

## 1.4 Coopertition®

FIRST extends their philosophy through their value of Coopertition®, which “produces innovation. At FIRST, Coopertition is displaying unqualified kindness and respect in the face of fierce competition. Coopertition is founded on the concept and a philosophy that teams can and should help and cooperate with each other even as they compete. Coopertition involves learning from teammates. It is teaching teammates. It is learning from Mentors. And it is managing and being managed. Coopertition means competing always, but assisting and enabling others when you can.”

## 1.5 What is FRC?

FRC (FIRST Robotics Competition) is FIRST’s oldest robotics program. It is designed to provide a rigorous engineering challenge to high school students as well as to teach leadership, collaboration, and project management. Over eight thousand teams from around the world have competed since the inception of the program. Each year, every FRC team begins its build season when the game is released in early January, and then spends approximately six weeks designing, building, and programming a competition-worthy robot. The team will compete in several competitions which contribute to rankings. High ranking teams in the Pacific Northwest then compete for a chance to advance to the World Championships in Houston.

## 1.6 Benefits of FRC

- Learn STEM skills through participation in FRC.
- Learn Business skills through first hand experience running the FRC team.

- FIRST partners offer over \$80 million in annual scholarships.
- Develops skills for communication, teamwork, and problem-solving
- Allows students to specialize in areas of interest (mechanical, electrical, software, CAD, business and marketing, etc).
- 0.5 elective credits each semester.
- Credits count towards earning the status of Career and Technical Education completer.
- Looks great on college applications.
- Access to cool toys, drones, virtual reality, and more!
- Amazing learning opportunity for those interested in engineering, business, and/or marketing.
- Closest thing to real world engineering and small business experience at a high school level.

## 2. ABOUT 7034: 2B Determined

### 2.1 Who is 7034?

Team 7034 is an FRC team established at West Linn High School in 2017 to promote STEM learning and provide a tailored program to give students career experience in a safe and welcoming environment. In addition to the robotics competition, the team competes in as many local events as possible and participates in a variety of projects year-round from our home base at West Linn High School. The team was founded in September of 2017, spearheaded by a small number of students from FIRST Tech Challenge teams who demanded a more exciting and challenging robotics program. Since its inception, Team 7034 has strived to be more than just a competitive FRC team and has grown to be an advocate for STEM and robotics awareness both at the high school and in the community. Additionally, the team strives to make robotics accessible for students of all ages and capabilities.

### 2.2 Team 7034 History and Accomplishments

- *2017 - 2018 Rookie Season Awards:*  
Highest Rookie Seed – Wilsonville District Event  
Rookie All-Star – Lake Oswego District Event  
Highest Rookie Seed – Lake Oswego District Event  
Rookie All-Star – Pacific Northwest Regional Event  
Rookie Inspiration – World Championships - Hopper Division
- *2018 - 2019 Second Season Awards*  
Judges Award – Wilsonville District Event  
Safety Award – Wilsonville District Event
- *2019 – 2020 Third Season*  
Grand Marshall - West Linn Old Time Fair (canceled due to COVID-19)  
(Season cut short prior to our team's first competition due to COVID pandemic.)
- *2020 - 2021 Fourth Season*  
Chairman's Award -- District Competition

Chairman's Award -- Pacific Northwest Regional Competition  
(No live competitions due to COVID pandemic - awards events were virtual.)

- *2021 - 2022 Fifth Season*  
Finalist - World Championships - Newton Division  
Engineering Inspiration Award - Oregon State Fairgrounds District Event  
Grand Marshall - West Linn Old Time Fair  
BunnyBots Winner - Portland Pre-season Competition  
Innovation in Control Award - Clackamas Academy District Event  
Winner - Clackamas Academy District Event  
Winner - Oregon State Fairgrounds District Event  
Dean's List Finalist (Maxfield D) - Pacific Northwest Regional Competition  
Alliance Captain - Chezy Champs
- *2022 - 2023 Sixth Season*  
Girls Generation Winner - Portland Pre-season Competition  
BunnyBots Semifinalists - Portland Pre-season Competition  
Team Sustainability Award - Clackamas Academy District Event  
Impact Award - Oregon State Fairgrounds District Event
- *2023 - 2024 Seventh Season*  
Girls Generation Finalist - Portland Pre-season Competition  
BunnyBots Winner - Portland Pre-season Competition  
Judges' Award - Clackamas Academy District Event  
Dean's List Semi-Finalist (Olin D) - Wilsonville
- *2024 - 2025 Eighth Season*  
Girls Generation Finalist - Portland Pre-season Competition  
BunnyBots Finalist - Portland Pre-season Competition  
Excellence in Engineering - Clackamas Academy District Event  
Winner - Pacific Northwest District Championship  
Team Sustainability Award - Pacific Northwest District Championship

### **2.3 Team 7034 Mission**

We are determined to inspire students in science, engineering, and technology while developing individual skills and character. We strive to make a positive impact on each other and our community by being role models, engaging every student, and challenging ourselves and others through collaborative learning and problem solving.

### **2.4 Team 7034 Vision**

2B Determined strives to empower students to gain self-confidence and become leaders, collaborators, critical thinkers and problem solvers while fostering a culture of STEM education in our community.

### **2.5 Team 7034 Motto**

"We are Determined"

### **2.5.1 Team 7034 Cheer**

["Who are we?"

"West Linn"

"What are we?"

"DETERMINED"] x2

## **2.6 Team 7034 Goals**

Promote STEM education at a high school level, creating a strong sustainable program, with the ultimate goal of competing in the FIRST Championship.

### **2.6.1 2B Educators**

The main focus of the team is to provide an educational platform that is not found in the traditional classroom. Team members have the opportunity to work hands-on alongside industry mentors. Students are encouraged to challenge themselves and others at all times. Team 7034 also provides opportunities for team members to be educators when sharing and teaching their skills to primary, middle, and high school students as well as the community.

### **2.6.2 2B Inspirational**

Another key aspect of the team is to inspire all youth to consider pursuing a career in a STEM field. Our team is a cornerstone of all STEM and engineering CTE (career and technical education) within West Linn High School. With a growing outreach program, the team works towards creating a strong presence for both the team and STEM.

### **2.6.3 2B Impactful**

In addition to strong growth in individual students' skills and character, team members are encouraged to make an impact on others within our community. Students have the resources and ability to take initiative and make great change while also developing leadership skills.

## **3. Student Commitment**

### **3.1 Student Eligibility Requirements**

- Students are expected to attend all scheduled FRC class meetings.
- Students will volunteer at team outreach events with at least 9 hours to be completed by the end of first semester. Over the course of the school year:
  - Students will help with at least 1 team hosted camp.
  - Students will volunteer for at least 9 hours at team-supported SOLVE events.
  - Students will support at least one other outreach event.
- Students will attend all local team competitions. As the FRC Competition progresses, there may be regional and world competitions to attend as appropriate and able.
- Students are required to be respectful, responsible and reliable as they communicate effectively, build a positive, safe environment and uphold a clean workspace.

- Students and their legal guardians must fill out all forms and pay all fees required by Team 7034, West Linn High School and FIRST. Need-based scholarships are available.
- Violation of any of these conditions could result in forfeit of class credit and removal from the team.

## **4. Team Organization**

### **4.1 Mentors**

One of the most important aspects of the FRC program is the partnership between students and mentors. This collaboration provides students educational support and inspiration. The team is always welcoming new mentors. All mentors must go through a team evaluation process, a background check and fingerprinting through the WLWV school district protocol. Here are typical characteristics and responsibilities.

#### **4.1.1 Head Mentor**

**Tim Manes**

- Oversee the Robotics Team “Business” to include the WLHS Class & Club
- Oversee Mentor Selection and Involvement
- Formalize team roster
- Manage selection and positions of team members
- Ensure lab and student safety
- Provide grade and credit for the class

#### **4.1.2 Team Administrator**

- Organize team travel and meals
- Ensure national registration of students and team
- Oversee general communication with team and parents
- Oversee team finances and budgeting
- Liaison with FRC Organization
- Oversee parent volunteers

#### **4.1.3 Business, Marketing and Outreach Mentors**

- Oversee media outreach and publications
- Assist with sponsor and grant proposals
- Provide professional guidance and training to students
- Have experience in a field related to business or marketing

#### **4.1.4 Technical Mentors**

- Encourage and demonstrate safe practices
- Possess extensive knowledge of tools and machines
- Help maintain a proper work environment
- Be properly trained on every machine in the lab
- Be practiced and safe with machinery
- Provide professional guidance and training to students

- Typically have experience in a field related to mechanical/electrical/software engineering and/or building/manufacturing/machining trades.

## **4.2 Sub Teams**

All team members will have primary responsibilities within a single sub team. There are a variety of opportunities to contribute to the chosen sub team and the overall success of the team. Over the course of the season, students may have the opportunity to work with other sub teams for specific competitions or events.

### **4.2.1 Business/Marketing/Outreach (MOB)**

The business, marketing, and outreach sub teams are together responsible for maintaining the inner workings of the team. They must ensure the team is properly communicating and has the resources to do so. The sub team records all income and expenses, builds and sustains partnerships with current sponsors, parents and volunteers to ensure all registrations and forms are properly completed. This sub team improves and maintains the team branding and identity, promotes events and organizes outreach opportunities and events. In addition, they are responsible for all team publications and updating social media.

Specific positions could include: photographer, videographer, video editor, written editor, web designer, graphic designer, social media manager, community service manager, unified robotics members, summer camp coordinators, and day camp coordinators. Members may fulfill multiple roles.

### **4.2.2 Hardware: Mechanical/Electrical/Design**

Under leadership of the System Integration Lead, the hardware sub teams are responsible for the physical aspects of the robot design, prototyping, building and wiring. This includes CAD models and drawings of the robot, as well as CAD assisted analysis. They must also model parts to be produced by machines for the robot, create prototypes to show proof of concept and/or feasibility, and manufacture and assemble parts. This sub team also creates wiring harnesses and connects all circuitry for the robot. They are expected to properly assemble, diagnose and fix all systems within the robot using tools for which they have been trained. The hardware team is also responsible for the organization of tools, parts and batteries in the lab and at competition.

### **4.2.3 Software**

The software sub team is responsible for writing all code for the robot and other needs in the lab/classroom. This includes software robot control and monitoring systems, as well as any other gadgets used in the lab. Software works directly with the MOB sub team to build and maintain the team website.

### **4.2.4 Lab Resources**

The Lab Resources sub team is required to maintain both the workshop and the competition pit areas. They must build/design the pit, robot cart and field elements. The sub team is also tasked with making sure proper safety protocols are upheld and tools are in good condition. This subteam is also responsible for operation and upkeep of all machine tools within the lab, and the training/assistance of students on the use of machine tools.

#### **4.2.5 Strategy/Scouting**

The strategy subteam is responsible for managing systems that enable the team to gain competitive team information to be used in competition. For example, the sub team will work to identify compatible teams that would make good Alliance Partners and build relationships with those teams accordingly. This team also conducts scouting of matches and teams at competitions.

#### **4.2.6 Safety**

The safety sub team is responsible for managing the team's safety systems. These are further described in the Safety Section of this handbook.

### **4.3 Student Leadership**

Team 7034 prides itself on being a student led organization. Student leads are a critical aspect of the organization for both the leadership training, student inspiration and the overall success of the team. All student leads are recognized as individuals who can make a larger commitment and provide good examples for other team members.

#### **4.3.0 Leadership Selection Process**

The Student Leadership Team consists of a system integration lead, and leads for each sub team. During the school year the Student Leadership Team will meet at a mutually agreeable time and frequency (typically weekly). The lead meeting is used to coordinate upcoming events, make plans for the next few weeks' meetings and activities, and address any issues or improvements for the team. The Student Leadership Team will also meet with the mentor team as needed (typically monthly). Some student leadership positions may be split between two people to reduce the workload, or for teaching purposes. All student leaders must have been a team member in the previous year; if no such person is suitable for the position, it will be managed on a case-by-case basis. The Head Mentor oversees the selection process and reserves the right to remove any student from a leadership position for any reason.

Students who are interested in leadership opportunities can apply for these positions by completing the Student Leadership Application (see Appendix B). The Student Leadership Application contains additional information on Student Leadership Expectations as well as more detailed Lead and SubTeam responsibilities. Below is an abbreviated list of lead responsibilities.

An annual leadership retreat is planned to support the incoming leadership team. Activities may include team building, calendar planning, subteam transition, and the previous year in review (critical analysis and identify needs/improvements).

#### **4.3.1 Overall Team Lead**

- Works closely with the head mentor and leadership team
- Chair of the Leadership Team
- Ensure team calendar, activities, and planning are accurate
- Works with the System Integration and MOB Leads to develop master schedules for the year
- Be aware of all projects and their progress

#### **4.3.2 System Integration Lead Ronin Coxwell**

- Project Manager for robot design, build and competition readiness
- Works with sub team leads to establish project timeline and make sure deadlines are met (Gantt Chart)
- Collaborates with strategy lead to run Kickoff Day 2
- Oversees formulation of robot requirements and priorities
- Ensures all robot subsystems cohesively combine as one robot meeting the requirements
- Communicates effectively with mentors
- Has knowledge of all robot subsystems and potential failure modes

#### **4.3.3 Safety Lead Veraina Langley**

- Administer training and clearance tests
- Be a role model for safe practices
- Remind other students of proper, safe procedures
- Oversee Minor Injury Forms (MIFs) tracking and safety resources
- Know proper protocols in case of an emergency
- Update the safety manual regularly
- Maintain safe operations in the pit at competitions
- Organize pit safety materials
- Maintain safety materials such as fire extinguishers and first aid kits
- Communicate with other safety leads at competition about their safety practices
- Help define safety procedures including an emergency evacuation plan and meeting spot, to follow at camps, team events, and competitions.

#### **4.3.4 Business Lead Louis Cekay**

- Organize team communications, emails
- Oversee finances
- Maintain relationships with current sponsors and community partners
- Write grants
- Work with all leads to communicate financial needs and budgets
- Delegate and assist with sub team tasks

#### **4.3.5 Marketing Lead Darby Wheatley**

- Manage team image and identity
- Create and develop annual team merchandise
- Approve team publications
- Produce projects representing sponsors
- Design and maintain website
- Manage social media presence
- Develop and utilize skills for Canva, Adobe Illustrator, and general design
- Delegate and assist with sub team tasks

#### **4.3.6 Outreach Lead Ravenna Talaga**

- Coordinate school events
- Coordinates team participation in community events outside of school
- Organize camps and communication with other programs

- Manage communication with outside organizations
- Primary Contact for judging in pits during competition
- Delegate and assist with sub team tasks

**4.3.7 Mechanical Lead(s) Cormac James/Taylor Carr Heuer**

- Supervise robot construction
- Be familiar with drive base and manipulators
- Monitor robot size and weight
- Collaborate with Design to oversee prototyping
- Record and request required parts and stock
- Lead mechanical training sessions
- Account for the organization of the FRC bay
- Delegate and assist with sub team tasks

**4.3.8 Electrical Lead Ananya Ilanchelian**

- Supervise mounting and wiring of robot electronics
- Possess knowledge of sensors and controllers
- Delegate and assist with sub team tasks

**4.3.9 Design Lead**

- Have experience with 3D modeling software
- Assess feasibility of design options and communicate with Manufacturing
- Collaborate with Electrical and Software to place necessary components
- Produce presentation models and images of the robot
- Oversee creation of Tech Binder in collaboration with Marketing
- Collaborate with Mechanical to oversee prototyping
- Maintain and catalog design and CAD standards
- Teach CAD training sessions
- Delegate and assist with sub team tasks

**4.3.10 Software Lead Jack Morozov**

- Be knowledgeable in relevant programming languages and library bindings
- Be knowledgeable in the control of mechanical systems and computer vision
- Keep all software and software licenses up to date
- Create and maintain robot software requirements
- Delegate and assist with sub team tasks
- Oversee robot software and other team projects

**4.3.11 Strategy/Scouting Lead Alivia Marshall**

- Facilitates game strategy
- Collaborate with other local teams to run initial Kickoff
- Collaborate with system integration lead to run team-specific Kickoff
- Organizes scouting at events
- Determines alliance selections
- Select and organize competition roles
- Delegate and assist with subteam tasks
- Trains all scouting roles

- Create/modify game-specific data spreadsheet & scouting software

#### **4.3.12 Lab Resources Lead**

**Maxx Rudzek**

- Design workshop and pit
- Oversee pit construction and operation
- Select and organize the pit crew
- Oversee lab maintenance and stocking
- Oversee lab improvement/upkeep
- Key resource for lab equipment training and utilization
- Possess skills in CAD and CAM softwares
- Delegate and assist with sub team tasks
- Knowledge of upkeep, operation, and safety for all machines

## **5. Student Expectations**

While participating in FRC, individuals are students in a graded class for credit, members of a school club, and team members of FRC Team 7034: 2B Determined. Students who join the team have taken on a responsibility that requires strong commitment in order to maintain an excellent student experience. Students must also show the ability to represent the team in a positive manner at all times.

### **5.1 School Grades**

Students are expected to balance their team responsibilities with their school work. Schoolwork should be considered a first priority, even before robotics. Students must have no grades below a 'C' for all progress reporting periods. If a student's grades are suffering due to robotics, an action plan will be created via collaboration with the student, their parents and lead mentor to ensure academic success. Robotics is intended to supplement school learning, not inhibit it.

### **5.2 Attendance Policy**

Students are expected to attend all scheduled FRC class meetings and the meetings of their associated sub-teams during the school year. If it is required to change or add meeting times throughout the school year students are only required to attend the originally scheduled times, additional meeting times are voluntary. Students are expected to utilize the attendance tracking system. Parents are expected to notify the course instructor prior to any absences.

### **5.3 Being Present and Productive**

It is required for students to be more than physically present at meetings. While Team 7034 prides itself on the social aspect of its community, students should come to meetings prepared to assist in a variety of ways. During any down time and between competition seasons, there are always ways that students can assist with projects around the lab and classroom. Ask a lead or mentor for ways to be helpful.

#### **5.4 Code of Conduct**

All team members should recognize that they represent Team 7034: 2B Determined at all times, even when not present with the team or at a team event. Students are expected to show Gracious Professionalism®, Coopertition®, and represent the team in the highest manner possible at all times. Good conduct is expected at team meetings, interactions with visitors and other students, competitions or team events, and in any online presence.

#### **5.5 PDA Policy**

Being overly affectionate during robotics creates an environment that is uncomfortable and distracts from the main goal of learning in a safe, and fun community. Therefore students should refrain from inappropriate, intimate behaviors during any robotics meetings, events, and activities.

Inappropriate public displays of affection will not be tolerated. This behavior may include kissing, romantic hugging, or cuddling. Such behavior may result in a parent meeting and possible suspension from the team.

#### **5.6 Dress Code**

Seeing as robotics is a class, we ask that all members follow the school's dress code, as well as our additional protocol to ensure your safety while in the FRC lab. While working in the lab, it is required that long hair be up (i.e., unable to go past shoulders), closed-toe shoes be worn, dangly jewelry be removed, and no baggy clothing be worn (to include no long sleeves when working near moving machinery). Finally, safety glasses will be required (and provided) while anyone is working in the lab.

## **6. Team Travel Policy**

The team will occasionally travel to district events and/or competitions outside the Portland area. A student travel expectation form will need to be signed by all students and a parent /guardian prior to travel. Oftentimes team members will attend local events that may require transportation other than a bus. The team will attempt to find parent volunteers to assist in driving to these events, but it may be that students will drive themselves or others. If you do not want your student driving another student or riding with student drivers, please discuss this with the head mentor or team manager. For all competitions, the team will travel together as a load-in team or on the team bus. It is strongly advised that students are not drive themselves or others to competitions.

**6.1** All students in good standing on the team are invited to attend out of town events/competitions. Lodging, transportation expenses, and meals will be paid for by all traveling students. The total team cost will be divided equally between the students traveling. The team may utilize fundraising efforts to help defray the cost of these trips. Students will be assigned a room by the team manager and may not change rooms. Students will also be assigned a chaperone who must know where they are at all times.

**6.2** Parents are invited to attend all travel events/competitions as chaperones. All chaperones are responsible for their own lodging, transportation and meal expenses. Rooms for parents and chaperones may be available in a team room block after all team rooms are assigned, but this is not guaranteed.

## **7. Parent Volunteering**

We highly encourage parents to participate as parent volunteers. Volunteers are necessary for our team to run smoothly; parent volunteers help to organize trips, raise funds, and facilitate communications.

There are many ways for parents to get involved, including the following volunteer opportunities. Please contact the team manager for further information.

### **7.1 Snacks/Meals**

Snacks are provided in the lab for students during team activities. During the build and competition season, team members may work through lunchtime, on weekends and, approaching competitions, may pull extended hours that require a dinner break. Volunteers are needed to help keep snacks stocked and provide meals when needed. We also need volunteers to help with meals during our travel events.

### **7.2 Chaperones**

Chaperones are needed for various events both during the competition season and during outreach events. Chaperones are also needed for all travel events.

### **7.3 Transportation**

Parents are needed to help transport students to various outreach and competition events throughout the year. There is also an opportunity to assist with transporting supplies and equipment.

### **7.4 Event Volunteers**

Volunteers are needed at outreach events, FIRST robotics competitions, and other FIRST events. Duties may include judging, hospitality, set up, and various other activities.

## **8. Meetings**

### **8.1 Non-Build Season (October – December)**

Tuesdays and Thursdays 6:00 p.m. – 9:00 p.m.

There may be some extended hours and or Saturday to facilitate readiness for off-season competitions

Team Training, Outreach Events

Bunny Bots, Girls Generation Competitions and other friendly competitions.

### **8.2 Build Season (January – Mid April)**

Monday through Thursday 6:00 p.m. – 9:00 p.m.

Saturdays 9a.m. – 5 p.m.

### **8.3 Open Lab (June - Sept)**

Tuesdays and/or Thursdays 5:00 – 9:00 p.m. or as determined annually based on need, interest, and mentor support

Team projects, training, event preparation, and lab improvement.

## **9. Calendar of Major Events**

### **9.1 FRC Build Season (Early January - Late February)**

Immediately following kickoff every FRC team has approximately six weeks in which to build their robot. This is the time when the most commitment is expected, especially from members on hardware and software teams.

### **9.2 FRC Competition Season (Late February - Late April)**

Over a six week period we will attend two District events and possibly the PNW District Championship. During the time not spent at competitions, Team 7034 will be preparing for future events, practicing robot driving, manufacturing spare parts, packing toolboxes, and scouting other teams.

### **9.3 FIRST Championship (Late April)**

Depending on success during the competition season, we may be eligible for the FIRST Championship in Houston, TX.

### **9.4 FRC Off Season (Summer and Fall prior to Build Season)**

Despite the end of the official FIRST calendar, Team 7034 continues to work for the entire year. Summers are spent recruiting and training new members, reaching out to the community to inspire and provide information, conducting camps for younger students and participating in local robotics competitions.

# 10. SAFETY

## 10.1 Safety Message

We pride ourselves on promoting safe practices. Students are encouraged to be cautious and are required to be trained prior to using certain tools and machines. Safe behaviors and practices are a primary responsibility for every student.

## 10.2 Safety Protocols

- Safety glasses are required at all times within proximity of any robot building or manufacturing.
- Only one individual can be using a machine within the taped area.
- Students must be trained by a certified trainer with any machine.
- Closed toed shoes are required.
- Long hair must be tied back.
- No long and loose sleeves.
- Required tests are administered for different safety clearances.
- Every injury must be reported using Minor Injury Forms (MIFs).
- Major injuries must be reported to the Head Mentor and must be reported to the School District.
- All injuries are recorded and logged in the safety binder.

## 10.3 Safety Manual

The safety manual contains all safety practices and protocols for tools within the lab; it is typically located in the lab Safety Corner (or in the 'pits' at competitions). In addition, the safety manual provides information on appropriate first aid procedures, including area hospital information near all competition locations. All team members are required to review the safety manual.

## 10.4 The Importance of Safety

Team 7034 puts the safety of our students first. It is important for students and parents to feel at ease when students are working with industrial machinery. Safety is recognized by FIRST and properly following procedures can result in awards for the team. By staying safe our team earns opportunities to work with powerful machines and provides students career experience at their school. Team members are encouraged to remind each other to stay safe and practice proper safety etiquette at all team meetings and competitions.

# 11. Funding

## 11.1 Sourcing

Team members identify and connect with sponsors to obtain monetary or material support. The team may also pursue grants and scholarships as well as explore other fundraising opportunities. We pride ourselves on having good relationships with our sponsors, as their donations allow us to keep running.

## 11.2 Sponsor Benefits

Sponsor Appreciation Program					
Benefits	Community 0-499	Bronze 500-1499	Silver 1500-2499	Gold 2500-4900	Title 5000+
Title logo on annual team shirt					
Title logo on main season robot					
Large logo on annual team shirt					
Large logo on main season robot					
Custom robot plaque					
Medium logo on annual team shirt					
Medium logo on main season robot					
Small logo on annual team shirt					
Small logo on main season robot					
Link on website					
Logo on website					
WLHS Robotics "Thank You" Posters					
Social Media Shoutouts					
501c3 Tax Write-Off					
Logo on competition sponsor boards					
Business exposure to thousands					

# 12. TEAM FORMALITIES

## 12.1 Required Forms

Some forms are required upon joining the team in order to protect the health and privacy of members. These forms include:

- Team Application Form
- Medical Information Form
- FIRST Registration (online)
- Student Code of Conduct Consent
- Travel Expectations Consent
- Photography Releases As Needed - such as LAM Research

## 12.2 Team 7034 Awards

Team 7034 issue awards at the end of each season to recognize dedicated and enthusiastic members. A history of award recipients is included in the Appendix.

**Broken Joystick Award:** The Broken Joystick Award is given to those on the drive team during competition. During Team 7034's Rookie Season, the robot joystick controller broke DURING a competition. Not to be discouraged, they used their fingers as a joystick and continued to compete successfully. This award recognizes the 'can-do' attitude that the team strives to always have.

**Innovation Award:** The Innovation Award is given to a student who invented a creative, original solution to a problem, regardless of whether or not it was used for a final product.

**Inspiration Award:** The Inspiration Award is given to a student who challenges and assists others in the lab. They improve the work quality of everyone around them and never fail to welcome new members.

**Commitment Award:** The Commitment Award is given to a student who accepts any responsibilities, seeks opportunities, and steps up to whatever miscellaneous tasks the team may have.

**Judges' Award:** The Judges' Award, similar to FIRST's own Judges' Award, is given to a student deemed fit for recognition, but who may not fit into any other awards.

**Determination Award:** The Determination Award is reserved for a student not on the leadership team. It is intended to recognize a student who willingly took on challenges and found the perseverance and determination to overcome them. The physical award itself embodies determination - a corner of a cube balancing on top of a slanted plate.

**Rookie Award:** This award is reserved for a first year student who has shown initiative, growth and passion for the team.

# 13. ADDITIONAL RESOURCES

## **Team resources**

Email: [wlhsfrc@gmail.com](mailto:wlhsfrc@gmail.com)

Website: [wlhsfrc.com](http://wlhsfrc.com)

Twitter: [@team\\_7034](https://twitter.com/team_7034)

Instagram: [@team\\_7034](https://www.instagram.com/team_7034)

Facebook: [ToBeDetermined](https://www.facebook.com/ToBeDetermined)

TikTok: [team\\_7034](https://www.tiktok.com/team_7034)

YouTube: [Team 7034 - To Be Determined](https://www.youtube.com/Team7034)

## **FIRST Resources**

FIRST website: <https://www.firstinspires.org/>

Unofficial forum: <https://www.chiefdelphi.com/forums/portal.php>

Archives: <https://www.thebluealliance.com/>

## APPENDIX A:

### Team 7034 Annual Award Recipients

- 2017 - 2018 Rookie Season

Broken Joystick () - Aaron Markstaller, Parker Carlson, Adam Steinhilber, Kiger Rhoades, Kai Saito, Casey Culbertson

Innovation Award

Inspiration Award

Commitment Award

Judge's Award

- 2018 - 2019 Second Season

Broken Joystick () - Alyssa Hargis, Parker Carlson, Adam Steinhilber, Maddie Mathews, Kai Saito

Innovation Award - Maddie Mathews

Inspiration Award -

Commitment Award - Kate Sousley

Judge's Award -

- 2019 – 2020 Third Season

Broken Joystick Award - Kate Sousley and Maddie Mathews

(Due to COVID-19, there was no competition; Kate and Maddie helped 'drive' the team's replacement activities - staying connected, making PPE, etc.)

Innovation Award - Casey Culbertson

Inspiration Award - Brandon Wied

Commitment Award - Maxfield Dodge

Judge's Award - Beth Landsem, Thomas Uelman

- 2020 – 2021 Fourth Season

Broken Joystick Award - Amanda Hioe, Anna Olson, Beth Landsem, Kate Sousley, Leah Culbertson, Madeleine Mathews

Innovation Award - Maxfield Dodge

Inspiration Award - Brandon Wied

Commitment Award - Kyle Jensen

Judge's Award - Jakob Conner, Hope Bowcutt

Determination Award - Fuchsia Whelan

- 2021 - 2022 Fifth Season

Broken Joystick Award - Jason Chitwood, Maddie Mathews, Sam Felsted, Sarah Talbert, Thomas Uelmen, Max Dodge

Innovation Award - Sam Felsted

Inspiration Award - Hope Bowcutt

Commitment Award - Maddie Mathews

Judge's Award - Anna Olson, Sarah Talbert

Rookie Award - Claire Sousley

Determination Award - Jason Chitwood

- 2022 - 2023 Sixth Season

Broken Joystick Award - Max Dodge, Sam Felsted, Thomas Uelman, Lauren Gault, Claire Sousley

Innovation Award - Ethan McKelley

Inspiration Award - Maxfield Dodge

Commitment Award - Ronin Coxwell

Judge's Award - Emma Huberty/Thomas Uelmen

Rookie Award - Callen Molander

Determination Award - Hannah Compton

- 2023 - 2024 Seventh Season

Broken Joystick Award - Claire Sousley, Lauren Gault, Blakeley Nicholson, Ruby Deng, Alyssa Chang

Innovation Award - Duncan Duffield

Inspiration Award - Olin Dawson

Commitment Award - Louis Cekay

Judges' Award - Jonathan Wilson

Rookie Award - Athena Hall

Determination Award - Porter Sessions

- 2024 - 2025 Eighth Season

Broken Joystick Award - Aaryan Ilanchelian, Lauren Gault, Caleb Rubow, Henry Erickson, Olin Dawson

Innovation Award - Aaryan Ilanchelian

Inspiration Award - Caleb Rubow

Commitment Award - Duncan Duffield

Judges' Award - Aaden Dobelstein

Rookie Award - Taylor CarrHeuer

Determination Award - Maxx Rudzek

## APPENDIX B:



### 7034 2B Determined Student Lead Application

The West Linn High School FIRST Robotics Competition Team #7034 2B Determined provides many leadership opportunities for students beyond the recognized positions of group or team leads. Students that are selected to leadership roles will be expected to represent West Linn High School and Team #7034 2B Determined at all times. This extends outside of team meetings, activities and competitions, to all that you do. Being recognized as a team lead is an honor and a privilege, it is important that you recognize that you always represent the team.

Students who apply but are not selected into one of the lead roles should consider discussing their desire with mentors who will work to find leadership roles within groups or on special projects. Even if you are not sure if you are ready for a recognized lead role, but are interested in leadership, please apply (and make a note on your application). The mentors would like to identify those interested in growing in that direction so we can set you up with training and seasonal responsibilities in which you can gain leadership and management skills. This helps us to improve our leadership on all levels as we can more effectively plan training and turnover for this large team.

Students applying for a leadership position must be in good standing with the team, having been a member for at least one year, completed the required team service hours and consistently have passing grades. Students on the leadership team are expected to maintain good standing throughout their time as a team lead.

#### **Instructions:**

1. Read pages 2-4 of this document. The Student Leadership Expectations apply to all students in a leadership role, regardless if you hold a recognized leadership position. These expectations are a lot of responsibility, but you can do it. Leadership roles provide learning opportunities for students. You're not expected to be perfect, and you are definitely not alone. It takes time and practice to grow into the roles, and mentors are there to support you in your growth.

2. Read the specific duties of the leadership position(s) you are applying for, found on pages 4 through 10.

3. On page 11, you will find a set of questions to answer. Please provide written answers to those questions. If you are applying for more than one position and have a different response for each question regarding the different positions, you can either add an additional paragraph or you can submit separate applications, whichever is easiest for you.

4. Please have your application back to Tim Manes at [manest@wlwv.k12.or.us](mailto:manest@wlwv.k12.or.us) by the deadline. If you are working on your submission but are in danger of missing the deadline, please email Mr. Manes so we can work out a plan.

If there are things you don't understand or you have questions, please reach out to a mentor to discuss.

# Student Leadership Expectations

## Behavior

Students in leadership positions are expected to set the example for all team members, always demonstrating gracious professionalism: providing inclusive environments for all students, resolving differences, dealing with adversity, active in outreach and the celebration of accomplishments. Gracious Professionalism is the minimum bar at all times.

- What is Gracious Professionalism?

*“It’s part of the ethos of FIRST - a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community. With Gracious Professionalism, fierce competition and mutual gain are not separate notions. **Gracious professionals learn and compete like crazy but treat one another with respect and kindness in the process.** They avoid treating anyone like losers. Knowledge, competition, and empathy are comfortably blended. In the long run, Gracious Professionalism is part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity.”*

## Teamwork

First and foremost, you are a sub-team leader and member of a TEAM. While you are responsible for the work of your sub-team, you are also expected to reach across sub-team boundaries to work cooperatively with every other sub-team as necessary.

- This means you model the following behaviors - “How can I help you?” and “How can we work together to accomplish our common goals?” and “That is news to me, so let’s go find out what’s going on together.”
- You DO NOT engage in the following behaviors - “That’s not my job.” or “No one told me... so I don’t care.” or “Go ask someone else... I’m busy”.
- You are expected to model a world-class cooperative attitude for your sub-team. When you are so overloaded that this becomes difficult, you are expected to ask your mentor for assistance.

## Communication

Be an effective and committed member of team leadership. This means:

- Coming to meetings and being on time
- Helping create the agenda ahead of each meeting
- Actively listening to others
- Positively working to resolve issues

Be in frequent contact with your Lead Mentor. This means:

- Emailing/messaging daily during busy times to stay in sync with plans
- Keeping the mentor aware of any problems/challenges
- Getting help as necessary to make that day's work productive

Actively inform your peers and the team you lead.

- Use written documentation (Discord, text, email, and/or paper) to communicate across the overall team, peer groups, and to your own sub-team.
- Listening and gathering information, then organizing and transmitting said information to ensure the team's success.
- The expectation is that you will communicate as often as necessary to meet the goals of the team. This means daily communication to your sub-team during the build season, and status reports weekly. During some periods in build season, it may mean communicating multiple times in a meeting with other sub-team members and leads keeping things coordinated.
- *Accepting a leadership role means you are committing to whatever communication is necessary to make your team successful. This is a higher priority than the physical work that you do.*
- This does NOT mean having lots of information in your head that no one else is aware of. You should prioritize communication and project oversight over picking up a tool. Again, leading means your role is to enable your sub-team members to do the work by disseminating critical information and often teaching skills rather than performing the work yourself.

## Planning and Tracking

Actively participate in developing a plan and schedule for the overall team on every important undertaking and regularly update information to revise the plan. This includes everything from outreach activities to building the robot.

Take direct responsibility for the creation of a work plan for your team.

- This means that for each meeting, the leader has taken the time to think through what the team is to accomplish at that meeting.
- Arrives with assignments for each of their sub-team members.
- It is expected that this involves frequent communication with your mentors to plan workflow and resources.

Actively assess progress at the end of each meeting and make any corrections necessary.

- This means if it looks like your team is going to be late on delivering something, it is your responsibility to either get help to make the deadline, negotiate a change in scope for the deliverable, or renegotiate the delivery time with the sub-team that is dependent upon your output.
- *Missing a deadline and silently surprising others is unacceptable.*

## **Execution**

The sub-team leader is responsible for ensuring that sub-team members get the work done.

- This means that the lead is in a teaching and coaching role first and only picks up tools to do work themselves when all their team members have sufficient instruction and training to be working productively. If a sub-team member is standing around with nothing to do, that is an indication that the leader has not planned and communicated sufficiently.
- Again, leading means you are prioritizing enabling your sub-team members to do the work. This is a more important activity for a lead than the actual work you might do yourself. As an example, if the choice is between building a part, or helping coach three younger students through the building of parts, you should coach the three as a priority.
- Sub-team leads are expected to oversee and ensure that all the work done on the sub-team is correct and fulfills the specifications outlined in the functional design requirements.
- It is expected that this involves frequent collaboration with their mentors to guarantee success.

## **Skills Development**

Understand the capability of each member on the sub-team and identify specific new skills for each to master.

- This means that the lead develops a matrix of the sub-team members and relevant skills with their mentor
- Tracks the skills each sub-team member has mastered throughout the season
- Works with each sub-team member to expand their skill set

Work with the mentors to ensure that training and skills development solutions are successfully planned and executed thereby supporting the growth of each sub-team member,

## **Decision-Making**

Participate in Leadership decision-making processes in a gracious and professional way.

- Respectfully listen to others and paraphrase back to them their points of view to ensure understanding
- Actively steer your communication and behavior away from polarizing positions
- “Out-debating” your peers is NOT an acceptable or effective decision-making approach
- Work towards a solution that is best for the TEAM
- Be willing to compromise
- Commit enthusiastically to decisions made by Leadership and take actions that will ensure success

Make sure important decisions are being made in your sub-team and keep them moving forward in such a way that the method is inclusive but decisive and efficient. This means that you are:

- Organizing for analysis and review of results
- Calling for votes among your sub-team when appropriate
- Asking for your team to give you data so you may make an informed decision
- Consulting with your mentor on decisions that cross-functionally affect the team and are critical to overall success

## **Time Requirements**

Being on a student-led team requires that the student leadership team be present and active throughout the year and at the many meetings and events that the team participates in. The time requirement for student leads is significantly more than for other students. This should be understood prior to applying and students that are not able to comply may be released of their duties.

- Student Leads should be on time to meetings and ensure that things are shut down properly at the close of a meeting/event.
- Student Leads will meet weekly at lunch and once a month at a pre planned Mentor/Lead meeting.
- Student Leads are expected to complete all team service hours with additional hours throughout the year, supporting the many offseason team events.
- Student Leads should be present for summer team activities, supporting camps and open lab times welcoming new students and supporting continuing activities.
- Support all meeting times during build and competition season which will include weekends and days during spring break.

# Lead and Sub-Team Responsibilities

## Overall Team Lead:

- Be an effective leader of the Leadership Team - call the meeting, be on time, make sure there is an agenda for each meeting, and make sure the information from the meeting is recorded and communicated out to the team.
- As the chair of the Leadership Team, keep meetings focused and on track.
- Above all, it is the responsibility of the Overall Lead to ensure the Leadership Team and its discussions are transparent to the team. This means that the Overall Lead must identify when “camps” of people start talking among themselves, and actively bring those discussions, however difficult they may be, to the table for group resolution, gracefully.
- Ensure the calendar is up to date and meetings and events are announced accordingly.
- Actively participate in developing a plan and schedule for the overall team on every important undertaking, and regularly updating that information to revise the plan. This would include things as small as participating in a small team gathering or as large as conducting the robot build.
- Maintain a “whole team” view of activities at all times. When the team is not on track for accomplishing goals on schedule, pull the team leads together to discuss and decide upon a corrective course of action.
- Work with the Systems Integration Lead to develop and maintain the master robot build schedule.
- Be aware of the progress and general activity of all sub-teams at all points in time.
- When there are tasks in one sub-team that require more people to help, make sure those situations are identified and work with the Systems Integration Lead to get help and resources from other sub-teams.
- Lead in a gracious and professional way, when it comes to making decisions in the Leadership Team.
  - o This means making sure that the meetings are run in a way that everyone has a voice and is heard.
  - o This also means outlining clear decision-making processes for the Leadership team to adhere to.
- Ensure important decisions are being made in a timely manner.

## Safety Lead:

- Create, update, and maintain safety training materials such as slideshows and quizzes.
- Conduct general, emergency, and any other pertinent training in a timely manner, and ensure *all* students complete required training.
- Read and understand both the FIRST Safety Manual and the Team 7034 Safety Manual. As the team’s safety program grows, contribute to the team manual and encourage team members to read it as well.
- If possible, become first aid and CPR certified.
- Regularly inspect (and replace if necessary) safety equipment such as fire extinguishers, first aid kits, and battery leak disposal containers.

- Monitor lab safety. Be present in the lab as much as possible to mitigate safety hazards and remind everyone to use proper PPE.
- Ensure lab cleanliness and organization.
- Track minor injury forms to provide the team with useful safety tips.
- Communicate with other Safety Captains about their safety practices, resources, and experiences at competitions. Give feedback and identify ways to improve team 7034's safety program. Be able to discuss safety with judges if necessary.
- Help define safety procedures including an emergency evacuation plan and meeting spot, to follow at camps, team events, and competitions.
- Always be a model of safe behavior. In the event that a student exhibits intentional unsafe behavior on a regular basis, report the student to a mentor.

## **Business Lead:**

- Work with Overall, Marketing, and Outreach Leads to ensure operation of team business.
- Maintain team finances. Organize and oversee the creation of the budget. Work with all other leads to ensure the budget is accurate for the year and the team stays on track in its spending.
- Provide regular budget updates to the Leadership team and team.
- Maintain relationships with current sponsors and community partners.
- Identify and cultivate new corporate sponsorship and manage ongoing relationships.
- Ensure the team calendar is up to date and event timelines and schedules are executed on time.
- Is the first line of communication for the team, this applies to email and presentations.
- Ensure all MOB and team documentation is accurate and up to date
- Ensure the team drive is organized and ensure team members have proper access to team documentation.
- Guide the efforts of the team in applying for awards requiring up-front submissions.
- Organize and plan for grant writing for the season.

## **Outreach Lead:**

- Work comprehensively with the marketing lead to promote the team as well and efficiently as possible.
- Organize and run camps throughout the year, working with the other leads for the best timelines to host them.
- Guide the efforts of the team in applying for awards requiring up-front submissions (Impact, Woodie Flowers, etc).
- Be in communication with our community partners, creating opportunities for our team to extend its outreach.
- Guide and provide planning and coordination for the outward-looking event calendar for the team, including sponsor recognition, outreach, recruiting, fund-raising, and support of FIRST-related activities.
- Develop and promote the team within FIRST and to the community at large through communications and events.
- Monitor and regularly respond to team email.
- Monitor Communications with the school through our Club aspect, and coordinate club related activities.
- Maintain documentation of the overall/yearly timeline and duties of the MOB team in order to promote project sustainability.
- Proactively look for new outreach opportunities for the team to carry out in order to grow our programs
- Cooperate with the Business and Marketing Teams in any endeavors they may need.
- Develop and train the new Outreach members, working with them, delegating projects, and teaching on the go.

## **Marketing Lead:**

- Work comprehensively with the outreach lead to promote the team as well and efficiently as possible.
- Maintain the team website, social media, and any other digital team presence.
- Work with the business lead to document usernames and passwords.
- Ensure photos and videos are collected for marketing materials throughout the year.
- Define the skills, tools, equipment and systems necessary to promote the team through marketing.
- Establish and maintain consistent team branding.
- Plan for and execute activities that establish a team theme and spirited presence at competitions each year.

- Manage the distribution of team information updates to all team members, parents, publishers, and outreach partners, including working with the Software team to routinely update the website.
- Develop, brand, and promote the team within FIRST and to the community at large through communications and promotional materials and events.

### **Systems Integration Lead:**

- Develop the master robot build schedule with technical leads and mentors. Track progress, manage and communicate schedule changes. Synchronize planning across sub-teams to coordinate robot access and ensure systems integration.
- Work with the Strategy Lead to organize and run the team Kickoff Event, analyze game strategy, and develop a team strategy
- Work with the leadership team to develop the official robot requirements using input from the team. Communicate the requirements to the team and ensure the robot meets the requirements to the best of the team's ability.
- Continually track robot progress and update technical leads so they can incorporate design changes. Work with all technical leads to manage scope of design, reprioritize workflow, and schedule additional meetings as needed to resolve issues that may arise.
- Ensure that all robot development is in alignment with the agreed-upon functional design requirements, and that all development, cycles of learning, and trade-off discussions are happening on schedule. Have a general understanding of the capability of each sub-team and be in a position to make a final decision, if necessary, involving technical trade-offs.
- If a complex robot design is the plan, but the team does not have the technical skills to accomplish the task in the required time without assistance from mentors, it is up to the Systems Integration Lead to recognize this situation and bring it to the Leadership Team for resolution.
- Document and oversee the typical operation of the robot build. Work with the technical leads to develop this analysis that identifies what each sub-team needs to include in the robot.
  - o For each robot task, list all the physical steps taken by the robot to accomplish. Include mechanical motions, electrical, and software.
  - o List all setups and calibrations needed for the robot and the steps by which they are accomplished.
  - o List all guard sensors (limit switches) needed to protect the robot from damaging itself.
  - o List all the steps of each software automated sequence.
- During the build season, identify and evaluate all potential technical problem areas (risks). Develop and directly manage cross sub-team strategies to eliminate or minimize the impact of those risks.
- Work with the technical leads on the integration of various functions and modules into the robot and resolve all conflicts.
- Assist with or procure extra manpower and resources for internal sub-team projects, as necessary, to ensure schedules are in place.
- Track all off-season projects, including training. Be aware of all active projects and current status, ensure continual progress, and drive toward successful project completion.
- After every robot, reflect with the team to learn what worked, what didn't, and what was left out.

### **Manufacturing and Facilities Lead:**

- Maintain all lab equipment and perform preventive maintenance regularly
- Create and maintain documentation for all tool operation, safety, and maintenance
- Inventory and maintain all material, tooling, fixtures and supplies.
- Conduct tool and equipment training for students
- Ensure lab cleanliness and organization.
- Establish and document feeds and speed recommendations for all lab tools.
- Work with mechanical lead to prepare, organize and maintain pits at competitions.
- Manage the production and manufacturing of parts.
- Work with the design lead to ensure the robot is manufacturable.

- Organize and lead lab improvement projects
- Responsible for all aspects of the pits at competition
- Select and organize the pit crew.

## **Design Lead:**

- Work with the Strategy team to define the required functionalities and performance of different components on the robot.
- Work with Mechanical, Systems Integration, and Electrical teams to determine the block-out of all robot components, including drive base, electronics panel, and any manipulators.
- Possess enough mechanical knowledge to ensure the designed robot is possible to fabricate/assemble.
- Work closely with the technical leads to support robot design requirements and ensure smooth integration of all robot systems.
- Work with the Mechanical team to plan and oversee the prototyping.
- Follow robot components through the fabrication and assembly process to ensure functionality and accuracy. Revise drawings to reflect any changes made to components during this process.
- Schedule and facilitate robot design reviews with the Systems Integration Lead, Electrical, Software, and Mechanical leads, and Mentors.
- Maintain and develop a CAD model of the robot, as well as all necessary components, drawings, and files necessary for playing the game.
- Maintain storage of all previous and current robot CAD models, in electronic form, in a long-term repository.
- Train students in creating CAD models, part fabrication drawings, and assembly drawings.
- Keep the CAD repository organized and easy to navigate and maintain CAD standardization.
- Release robot CAD at the end of the season.
- Maintain design standardization that is constantly evolving to expedite the design process. This includes standardized brackets, tolerances, etc.

## **Electrical Lead:**

- Define the skills, tools, equipment, and systems necessary to design, fabricate, assemble, and maintain the electrical control systems of the robot. This includes all FIRST-supplied control elements, power distribution, sensors, and custom circuits.
- Work closely with the technical leads to support robot design requirements and ensure smooth integration of all robot systems. This includes working with the design team to ensure a location for all electronics.
- Support physical prototyping activities that support decisions regarding game-specific design approaches and choices. For instance, running motors at specified speeds or running pneumatics to test a prototype.
- Work with the Drive Team, Software, and Strategy team to define the operator interface requirements. Ensure a functional operator interface that meets those requirements is built.
- Maintain documentation, in electronic form, that expresses the design of the electronics at all points in time and house that information in a long-term, sustainable repository.
- Plan for and provide skills training to students in order to build the electrical aspects of the robot.
- Ensure the quality and accuracy of the electrical systems on the robot. Keep wiring organized and accessible.
- Develop and follow a budget for the purchase of electrical components.
- Maintain spare electrical components and supplies with a high level of organization.

## **Mechanical Lead:**

- Define the skills, tools, equipment, and systems necessary to fabricate, assemble, and maintain the mechanical portions of the robot. This includes the drive base and all game-specific attachments.
- Work closely with the technical sub-teams to support robot design requirements and ensure smooth integration of all robot systems.
- Work with the Design team to ensure that the design of each robot component is functional and capable of fabrication and assembly.
- Plan and execute physical prototyping activities that support the top game performance and functional design requirements defined by the Strategy and Design teams.
- Work with the Strategy team to perform a quantitative analysis of each prototype to ensure that the best design is chosen for the final robot design.
- Work with the mentors and Design team to prioritize and schedule part sequencing for each shop production cycle.
- Work with the mechanical mentors to create a positive shop environment, both in attitudes and safety. This includes keeping the shop clean, putting tools away in their proper place, and working with fellow students in a safe and respectful manner.
- Develop and maintain a COTS parts arrival schedule to facilitate planning and sequencing of the overall robot build schedule.
- Work with the Design team to maintain documentation, in electronic form, that expresses the design of the robot at all points in time and house that information in a long-term, sustainable repository.
- Plan for and provide skills training to students in order to build the mechanical aspects of the robot. This includes training in the use of hand and power tools.
- Ensure materials are appropriately used considering cost and performance.
- Develop and follow a budget for the purchase of mechanical components and tools.
- Work with Facilities and Manufacturing lead in preparing, organizing and maintaining pits at competitions.
- Maintain event packing and planning, robot progress and scheduling, and pre-match checklist documentation, in electronic form, and house in a long-term, sustainable repository.

## **Software Lead:**

- Define the skills, tools, equipment, and systems necessary to program firmware for the robot and operator interface. This includes gaining a mastery of the FIRST-supplied build environment and toolset.
- Communicate with technical sub-teams to ensure the robot supports the functional design requirements.
- Work and plan with prototyping and mechanical in the development of systems to supply functioning code and communicate software demands.
- Assist in the development strategy, including communication with other sub-teams, along with supplying hardware specifications to fit desired control strategies (Sensors, Mechanisms, Sub Processors, etc.).
- Organize the sub-team so that each programming facet of the robot game (operator interface, autonomous, robot functions) are completed by deadlines to support competition.
- Coordinate sub-team members to ensure everyone has appropriate tasks and is capable of completing tasks assigned to them on time.
- Conduct code reviews and maintain presentable and organized programs for future members and other teams.
- Maintain documentation, in electronic form, that expresses the design of the robot and operator interface firmware, at all points in time, and house that information in a long-term sustainable repository (GitHub).
- Maintain the team's digital resources such as the website and Discord server (Including communication with the MOB sub-team to complete the task).
- Plan for and provide skills training to students in order to write software that achieves desired functions of robots and digital components.

## Scouting and Strategy Lead:

- Develops and refines strategies, analysis, and selection processes for gameplay, robot design requirements, prototype testing, and Drive Team training.
- Organizes and leads the annual Kick-Off critical analysis process with System Integration Lead. Dissects, analyzes, and simulates game strategies. Facilitates and manages the specific and general discussions throughout the kickoff event, with the primary goals of generating a deep team-wide understanding of the game and producing the top performance requirements for the robot.
- Works with technical leads to develop and maintain an updated and refined functional robot requirements list and assists in the quantitative evaluation of prototypes.
- Develop a comprehensive and objective Drive Team selection process to determine the members for each season.
- Plan training and ensure each member has a comprehensive understanding of their role and responsibilities at competitions.
- Work with the Coach to develop Drive Team practice drills/processes that ensure a deep understanding of in-match and season-long strategies prior to the competition season. Continue to refine the playbook strategies throughout the season to incorporate cycles of learning and ensure the best chance of achieving the season-long competitive goals.
- Define the requirements of the pit and match scouting systems.
- Develop requirements for the analysis of the pit and match scouting data. Develop and deliver comprehensive pit and match scouting training. Manage pit and match scouting personnel.
- Oversees and works with the Coach to develop the pre-match analysis process at competitions.
- Lead strategy meetings at each competition and often evenings before alliance selections, providing match and pit scouting reports and analysis in support of the alliance selection process.
- During competitions, provide data reports and recommendations about alliance partners and opponents to the Coach to inform game strategy.
- Maintain documentation of scouting techniques and activities, archived for use by future knowledge.

## Team #7034 Lead Student Application

Name: \_\_\_\_\_

What leadership role(s) are you interested in (ranked if preferred): \_\_\_\_\_

Date joined the team: \_\_\_\_\_ Current team service hours: \_\_\_\_\_

1. During the past year, you may have taken on a leadership role even if you did not have an elected leadership position. Discuss what the objective of the effort was, how many people you led, how you led them, what challenges the group faced, and what the outcome was. Looking back, are there things you could have done to make the group more successful?
2. Throughout the year communication is fundamental to the success of the team. You have experienced at least one competition season. For the position(s) you are interested in, describe what effective communication looks like to you. Share examples of how you have communicated with your team this past season.
3. Leadership is all about empowering your teammates to take action. What do you see as the steps to be effective at this?
4. While we would like well-rounded, active members on the team, lead students must be available during the build season. What activities could cause a conflict with your ability to attend meetings/trainings/build sessions and competitions?

