



**FRC**<sup>®</sup>

***FIRST<sup>®</sup> Robotics Competition***

**ALUMINATI Team #3555**



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## TEAM OVERVIEW AND HISTORY

FIRST Robotics Team 3555 Aluminati, registered as a 4-H club, is made up of students from E.O. Smith High School, which hosts the team, students from other nearby schools, including Windham Technical High School. With the support and guidance of adult mentors and parents, team members build a robot to compete in the FIRST Robotics Competition.

FIRST stands for “**F**or **I**nspiration and **R**ecognition of **S**cience and **T**echnology.” The FIRST Robotics Competition is an international organization that brings together professionals and students to solve an engineering design problem in an intense and competitive way. The competitions are high-tech spectator sporting events, the result of brainstorming, teamwork, mentoring, and project deadlines. The FIRST mission is dedicated to changing the way high school students regard science and technology. FIRST strives to inspire an appreciation for the real-life rewards and career opportunities in these growing fields. Visit [FirstInspires.org](http://FirstInspires.org) for more information.

In 2010, Jessica Hyde started the team along with four other E.O. Smith members. The team went to the 2010 Bash at the Beach competition and officially debuted as a FIRST team. After a long day of hard work, Aluminati progressed to the finals and unfortunately lost, but was rewarded for their achievement.

A couple months later, Windham Technical High School students joined the team and everyone was eagerly looking forward to 2011 Kick Off. At Kick Off, the year’s challenge, **Logomotion**, was revealed and the rookie team was thrown into the design process.

After six weeks of hard work designing, building, and programming, Aluminati’s first robot ‘Greg’ was born. Greg and the team then went to the Hartford Regionals competition at the Connecticut Convention Center. Aluminati did well even with the shock of the large, fast paced competition, and despite many technical difficulties the team ended in 47<sup>th</sup> place out of 58 total teams, which is impressive for a rookie team.

Despite not qualifying for Finals, Aluminati repaired and improved Greg and competed at many other off-season competitions, such as Bash at the Beach and WPI BattleCry, where the team did claim a place in finals.

Since our first year, we've also participated in **Ultimate Ascent** (2013), **Aerial Assist** (2014), **Recycle Rush** (2015), and **Stronghold** (2016).

In Ultimate Ascent, we used a window motor to shoot frisbees. Though we did not get selected in alliance selections, we were selected in an off-season competition and made it to quarter-finals.

Aerial Assist was a difficult year, but our team managed to bounce back the year after. The robot had tusks to lift the giant balls and used a bicycle chain system to throw them.

In Recycle Rush, our robot was an advanced version of a clawbot. We had rubber grips on the two claws and were able to rotate the totes. We got our highest ranking in a competition ever at the Hartford Regionals (27th out of 39).

In Stronghold, our robot was designed to maneuver over obstacles, pick up boulders, shoot boulders, and climb the castle. However, the design was overly ambitious. The robot was only able to cross barriers successfully during off-season competition.

In addition to competitions, we also do community service and attend fun events. Every year we march in the parade and man a booth with engineering activities and show off our latest robot at *Festival on the Green* in Storrs.

The team today consists of about twenty students, eight mentors (engineers, parents, UConn students) amazing volunteers (parents) and is constantly striving to improve the team for years to come.

### **Awards/achievements**

- 2010 Bash at the Beach – Finalist
- 2011 Where's Wolcott – The 'We really like you' Award
- 2011 Bash at the Beach – K.I.S.S (Keep It Simple Stupid)
- 2015 Hartford Regionals Competition - 27th place (out of 39 teams)

### **Volunteer/outreach Activities**

- 2011-2016--Engineering activities and demonstration of robot at the Celebrate Mansfield Festival (formerly known as Festival on the Green)
- 2010--Comcast Care Day where we made community garden/playfield in Hartford

### **Team Trips**

- 2013-2014 -- Annual trip to Maker Faire NYC for any interested students
- 2014-2015 -- Annual trip to Maker Faire NYC for any interested students
- 2015-2016 -- Annual trip to Maker Faire NYC for any interested students
- ~2 District Event Competitions + ~3 Off Season Events

## MISSION STATEMENTS

### **FIRST Mission:**

The mission of *FIRST* is to inspire young people to be science and technology leaders, by engaging them in exciting Mentor-based programs that build science, engineering, and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.

### **Aluminati 3555 Mission:**

The mission of our team is to educate students in both engineering fields (mechanical, electrical, CAD, programming) and life skills (communication, organization, self-confidence, gracious professionalism) and encourages students to take the initiative to solve problems.

## FIRST VALUES

**Gracious Professionalism:** coined by Dr. Woodie Flowers of *FIRST*, is 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. No chest thumping tough talk, but no sticky-sweet platitudes either. 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.

**Cooperatition<sup>®</sup>**: 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.

## TEAM GUIDING PRINCIPLES

**Presence and Productivity make Performance:** An effective team and robot is the sum of its parts and participation. A commitment by team members to attend meetings and events, for their duration, is key to success. Attendance at all team meetings, build sessions and competitions is required in order to remain a member and enjoy team rewards. Members must be properly excused by the head mentor if unable to attend.

**Student Hands On:** STUDENTS should be given and take responsibility for as much as they can handle, actively performing the work of designing and building the robot, programming and leadership.

**Safety FIRST:** ALL team members familiarize with and STRICTLY observe both FIRST and Team 3555 safety rules, at all times and all venues! Ignorance is no excuse.

**Beware! Perfect is the Enemy of Good:** The danger that one might never complete a task if one has decided not to stop until it is perfect, or completing the project well is made impossible by striving to complete it perfectly.

**Set Decision Criteria:** Decisions must have a deadline for finalization. Decisions must be accepted as final, not to be revisited, at least not in the near future.

**Avoid Procrastination Syndrome:** a form of procrastination where an individual or the team doesn't start working towards their objective until very near the deadline, leaving little or no padding if more time is needed, often resulting in missing the deadline. The team must be aware and strive to combat the tendency by setting good time based plans with interim targets.

## CONDUCT

Being part of a robotics team is ‘the hardest fun you’ll ever experience’. There are long periods of intense work, stress near deadlines and around decision making, interspersed with moments of incredible enjoyment, camaraderie, thrill and reward.

You will see many of the following rules duplicated in many places in this handbook, forms, websites and voiced by older members and mentors. They are in place to keep the team safe, happy and respectable. They must be observed at all times, in all forms of company and venues.

If a team member breaks any of the rules stated in the Code of Conduct (below), he/she will receive a warning. After three warnings, parents will be contacted.

All members must sign the Safety and Compliance Contract. If a team member knowingly violates these Safety Regulations, he or she will be subject to appropriate disciplinary action up to and including disqualification from the team.

### Code of Conduct

- Be attentive, respectful and kind towards mentors and other team members
- Do not use or wear personal electronic devices, earbuds and headphones during regular meeting times and competitions. Cell phones may only be used for essential communications.
- Actively participate and stay on task
- Do not harass or bully others

### Safety Regulations

- All team members must sign the safety and compliance contract
- All team members must take and pass the safety test to be a member of the team.

## **Team Attire, T-Shirts and Team Logo Wear**

Uniformity of attire and presentation demonstrates unity, cohesion and discipline within a team.

It is mandatory for all members present at public events to wear the the team 'colors', identifying themselves as part of the team by wearing a clean, un-creased, approved team tee-shirt or sweatshirt. Students and mentors will receive their first T-shirt free of charge. Additional tee-shirts will be made available for purchase, highly recommended for 2-3 day competitions.

Members arriving without proper attire to events will not be permitted to participate in team activities or be present in team spaces, including parades, booths, pits, competition field or ceremonies. Members may request and be provided a new tee-shirt, if available, on the day of the event, however will be expected to pay for same at the next meeting.

The team will pay for new T-shirts for all members and mentors if the design is changed.

## **TEAM ORGANIZATION AND GOVERNANCE**

### **Membership**

New members must satisfy the following requirements to be accepted into the team:

1. Have a genuine interest in sharing or developing skills in engineering or robotics related non-engineering areas. Experience is valued, but not necessary.
2. Have attended at least 4 consecutive team meetings
3. Demonstrate a commitment to learn and participate for the duration of the season
4. Be enrolled in the 4-H program in the 9th through 12th grades
5. Complete and return the following forms
  - a. Team Member Application and Information Form
  - b. Safety and Compliance Contract
6. Register in STIMS and TIMS respectively

Prior members of the team, including students, members, parents and other volunteers, must meet the following requirements every year in order to remain members:

1. Commit to active participation throughout the next season
2. Complete and return the following forms
  - a. Team Member Application and Information Form
  - b. Safety and Compliance Contract
3. Register in STIMS and TIMS respectively

## Governance

The team is governed by the mentor board, led by the head mentors and composed of senior mentors.

## Departments

The team is composed of mentors and students, grouped into the following departments:

- **Administration** - Includes STIMS/TIMS, activity scheduling, event registration, permissions, transportation, leadership, planning, Youth Protection Program, building and room access, computers, Internet tools (e.g. Google drive, email) and website.
- **Finance** - Includes fundraising, budgets, procurement, accounting, costing (e.g. bill of materials).
- **Outreach** - Includes team spirit, community service, recruiting, website/media, team enrichment (e.g. Maker Faire).
- **Safety** - Includes closet organization and storage, safety materials and equipment, supervision.
- **Mechanical Engineering** - cludes design, CAD activities.
- **Manufacturing Engineering** - Includes responsibility for workshops, tools, materials, fabrication.
- **Electrical Engineering** - Includes responsibility for electronics, wiring, electrical box/board.
- **Software Engineering** - Includes responsibilities for robotics software and programming.

## LEADERSHIP SELECTION AND DEPARTMENT MEMBERSHIP

Mentors and students may fill roles in one or more departments at the same time. Each department must have a mentor and student leader. Student leaders must be identified during post season or summer, ready for the next year. If necessary, leadership changes may occur during pre-season, but must be finalized before the beginning of build season. Leadership changes may also occur or be forced by circumstances including member leaving the team or request by member to step down.

### **Mentor Leader Selection**

Mentor leaders are selected by the mentor board.

### **Student Leader Selection**

Student leaders are selected by the mentor board. Candidates will be chosen based on demonstrated leadership, performance and adherence to FIRST principles. Team members desiring leadership positions must indicate this to mentors during the pre-season.

# ROLES AND RESPONSIBILITIES

## Mentors

- Mentors are the adult advisers of the team. It is the duty of the Mentors to guide, educate and lead the team. All mentors must make sure every student is in a safe environment, and that FIRST and school rules are obeyed. Mentors work closely with students, either in groups or one-on-one, to guide and enable each student to contribute to the team as a member. Mentors also collaborate with each other.
- Engineering mentors are knowledgeable in a field related to robotics. They assist the team in creating designs, understanding concepts, and constructing the robot.
- Non-engineering mentors are mentors with experience and/or interest in team management roles (fundraising, outreach, recruiting, etc). These mentors organize meetings, manage logistics, oversee team finances, work with the school board/administration, and perform other administrative duties.

## Eligibility:

- Mentors should pass the safety test
- Mentors must register with the team in TIMS
- Mentors can expect to have a background check conducted by FRC in accordance with the Youth Protection Program every year.

## Head Mentor - Administration

- Is the single point of accountability for the team.
- Is the supervising E.O. Smith High School faculty member and allows for his or her room to be used.
- Oversees the student and mentor leaders and team in conjunction with the student liaison.
- Maintains fiscal responsibility, manages bank accounts, budget and expenditure
- Manages fundraising activities
- Communicates balances to and mentors the finance lead student

- Is the main point of contact for any outside stakeholders, businesses, and organizations.
- Is ratified and recognized by the mentor committee each year.

### Head Mentor - Engineering

- Point of accountability for engineering for the team
- Responsible for guiding and managing other engineering mentors
- Acts as final arbiter for engineering related decisions by the team

### Department Lead Mentors

- Council of department lead mentors
- Serve as a council for team organizational decision making.
- Support the Head Mentors.
- Define and promote bylaws and guidelines for mentor organization.
- Exercise disciplinary action for both the student members and other mentors so as to preserve the morality and standards of the TEAM.
- Are to be elected by the mentor body each year.
- Screen and accept (or decline) requests by new mentor volunteers to join the team. In the absence of the Head Mentor at any meeting or event, a Senior Mentor shall serve as the Head Mentor.
- The team staff contact should be either the head mentor or one of the senior mentors.

### College Students and Alumni

- Team Alumni must wait at least a year before returning to the team and applying to becoming a mentor.
- College students wishing to serve as mentors must be invited and accepted by the mentor board.

### Parents

- Parents are an integral part of our team and are very important to our continued success.
- Parents and adult siblings of student members are encouraged to participate in activities and may offer supervision, transportation, and other support to the team at large, service which is greatly appreciated.
- Parents are a key factor in motivation and dedication of their son/daughter by supporting them in all aspects of their team involvement including:
  - participation in team activities whenever possible.
  - serving as mentors, offering their guidance and expertise to various team departments
  - Assisting their child member in all fundraising activities.
  - Attending parent mandatory meetings and competitions.
- Parents must be introduced to or known by the mentors when in the company of the team.

## **Student Mentors**

### **Eligibility:**

- Students must be in grades 9 through 12.
- Students may be from any high school in Connecticut
- Students are not required to have any previous knowledge relating to robotics.
- Students must attend all of the meetings to be considered a member unless there is notification for a known absence to the mentors.
- Student members must dedicate themselves to the team and show eagerness to learn new skills and work with other members and mentors of the team.
- Student members must follow the Team's Code of Conduct, pass the safety test, and follow Safety Regulations at all times or risk losing membership.
- Students must fill out all required FRC forms and sign up on the STIMS website.
- Students must wear their team shirt and black pants or shorts to competition. Students may also wear their team hoodie if they choose to get one.

## **STUDENT LEADERSHIP POSITIONS**

- Must have been an active, participant\* student member for at least one year prior to taking on the job and have shown initiative

- \*Present and highly active participant for at least 40 hours during the prior build season, two competitions and at least 50% of team meetings throughout the year (pre through post season)
- Encourages the team to function as consistent and efficient unit.

### Student Liaison

- Is identified and invited by the mentor board to act as liaison between the student members and head mentors.
- Maintains morale and ensures student cooperation.
- Runs daily meetings and keeps the team running smoothly during and after meetings.
- Helps coordinate trips and competitions.
- Sends out emails to the team members and mentors with a basic summary of that day's meeting and any important decisions and news.
- Records attendance at each meeting.
- Keeps the team notified and be the authority on team updates and/or rule changes.

### Finance Lead

- Works with departments to identify supplies and equipment requests
- Works with the Head Mentor to procure equipment, supplies and materials
- Leads fundraising effort, promoting and facilitating searches for new sponsors and fundraising opportunities.
- Maintains the Bill of Materials during build season.

### Safety and Supply Lead

- Is in charge of making sure the work area and closet are clean and in order.
- Makes sure that tools are put away at the end of the meeting and the closet is neat and orderly.
- Keeps the tool box and item boxes organized and labeled clearly. Inventory should be taken every few weeks.
- Enforces the safety rules laid out in this handbook.
- Makes routine checks into the rooms where the groups are working to make sure mentors and members are following the safety regulations appropriately.
- Will act as the Safety Officer at competitions.
- There is no prior membership requirement for the supply lead.

## Outreach Lead

- Is in charge of photography/videography and advertising.
- Is in charge of the public relations department, image, and branding.
- Works closely with the Treasurer and fundraising team, and assists with making marketing strategies aesthetically pleasing.
- Must be able to use professional programs such as Adobe Photoshop, Sony Vegas, and Premiere Pro. Programs such as Microsoft Paint, Windows Movie Maker, and iMovie are too basic and do not fulfill the Aluminati's needs.
- Keeps the website up to date, running and aesthetically pleasing; follows the guidelines stated in the Website Etiquette section in this handbook.
- There is no prior membership requirement for the Media Officer.

## Electrical Team Lead

- Is in charge of electrical design and build
- Helps train new members

## Mechanical Design Team Lead

- Is in charge of mechanical design and building
- Helps train new members

## Programming Team Lead

- Is in charge of overseeing the programming team and checking the source code to ensure code functionality and clarity.
- Teaches new members the team's choice of programming language and give out coding assignments to the sub-team.
- Must be fluent in all programming languages the team uses and is the go-to for any programming inquiries.

## FUNDRAISING

## **Fundraising Committee**

- Is convened by the Head Mentor
- Is composed of mentors and parents
- Committee meets regularly

## **SCHEDULE**

There are several seasons during the team year.

1. Fall (pre-season)
2. Build season
3. Competition season
4. Post-season
5. Summer

### **Fall Pre-season Activities**

1. During the Pre-Season it shall be the goal of the team to prepare for the coming Season in all possible ways. This shall include the recruitment of new student members, the training of the student members and mentors in relevant fields and operations, and the design and prototyping of general components that can be used year-to-year such as drivetrain designs and control systems.
2. This time should also be spent searching for and acquiring new sources of income. This includes sponsorships, grants, and fundraising opportunities.
3. The elected and appointed leaders shall be decided upon during this time.

### **Build Season Activities**

1. During the Build Season the robot will be designed, constructed, and tested.
  - a. During this time the team should meet every day, and both the student members and mentors should communicate regularly outside of meetings.
2. The first week of build season shall be spent in the following manner:

- a. On the day of Kickoff, each student member and mentor shall watch the game reveal and description and read the Game Manual. No discussion of robot design or strategy shall take place at this time.
  - i. The team shall watch the game reveal at an organized meeting. This can be a team specific meeting, however it is recommended that the team attend an official kickoff event whenever possible.
- b. On the second day of the Build Season, the team shall meet as a group and decide on an overall game strategy for that season. This decision will be decided as a group by the student members. The mentors do not have a vote in this decision, however it is strongly encouraged that the student members take the suggestions and observations of the mentors under advisement. The mentors will still take an active role in the discussion, and can both champion ideas and attempt to guide the team away from those that do not have merit. No discussion of robot design shall take place at this time.
  - i. If for some reason the team is unable to decide upon a strategy in one day, the discussion can be extended to a second day.
  - ii. If the team is still unable to decide upon a strategy at the end of the second day the captain, executive officer, and head mentors shall decide upon a strategy for the team before the third day of the Build Season.
  - iii. No student member that has not read the Game Manual fully shall be allowed a vote in this discussion. If asked the student members are to be assumed to be honest, however if the team has reason to believe they have not read the rules they can be excluded from discussion until they do so.
  - iv. No mentor shall be allowed to participate in the discussion until they have read the Game Manual fully. This includes the head mentors.
- c. On the third day of the Build Season the team shall meet as a group and decide upon the design objectives of the robot based upon the strategy formulated the day before. These design objectives are to be listed as actions, operations, and priorities instead of specific methods of execution.
  - i. The priorities generated by this discussion should be finalized in such a way that they are in a definite order. Similarly any actions and/or operations the robot is to be capable of executing should be listed in a defined order.

- ii. These priorities, qualities, specifications, actions, and operations shall be decided upon in the manor listed for the overall strategy.
  - iii. No robot discussion shall take place at this time, however student members should take into account the general feasibility of their decisions.
- d. On the fourth day of the Build Season the team shall divide into subgroups to brainstorm and prototype mechanisms and systems so as to meet the priorities formulated the day before. Emphasis will usually be placed on mechanical systems, however electrical and software systems that are relevant should be evaluated as well.
  - i. These groups should nominally consist of student mentors and be led by the relevant team leader and/or a mentor with experience in the relevant area.
    - 1. There should be a subgroup for every design being evaluated.
  - ii. These subgroups should not rely on the use of CAD. CAD may be utilized, however there is no need for exacting detail at this point, merely a proof of concept.
  - iii. Ideas that a subgroup, after consulting with the team leader and a relevant mentor, has decided is not feasible shall be discarded. No other action is necessary.
  - iv. The team can decide to leave specific components, such as the drivetrain, to be evaluated and finalized at a future point if needed due to lack of resources and/or people.
  - v. If possible a working model shall be made to prove the validity of a design.
- e. At the end of the first week of the Build Season the subgroups shall present their ideas and findings to the team. The team will then decide what ideas are to be utilizing the same method and rules listed for the overall strategy and priorities listed above.
- f. Once these design concepts are finalized, the team shall again divide into subgroups to begin the design and manufacturing process.
  - i. While it is encouraged that the team make a CAD model of the robot, the design and manufacturing process should not be delayed by the construction of the CAD model. The actual construction of the robot shall be prioritized over all other objectives.

3. It shall be the goal of the team to finish the construction of the robot by the end of the fifth week of the Build Season.
  - a. When this goal is satisfied the team shall attend a week 0 shakedown event.
  - b. The time between the completion of the robot and the beginning of the quarantine period shall be spent testing the robot and allowing that year's drive-team to practice operating it and functioning together.
4. During the Build Season the attendance of all student members shall be logged.
  - a. At the beginning of a meeting all student members in attendance shall write down their names and the time on that night's attendance sheet.
    - i. If a student member arrives late to a meeting they shall write their name and the time that they arrived on that night's attendance sheet.
  - b. At the end of a meeting all student member shall write down the time on that night's attendance sheet.
    - i. If a student member leaves a meeting early they shall write the time of their departure on that night's attendance sheet.
  - c. Student members may only write down their own names and times on the attendance sheets.
  - d. In order to be considered an active member of the team for that year a student member must attend 50% of the meetings.

At the end of each week of the Build Season the student member with the most work hours shall be congratulated and rewarded. Two student members may be rewarded if they tie for number of hours. In the case of a three-way or greater tie the head mentors shall select the student(s) to be rewarded. No student may be rewarded twice in one Build Season unless all other students have been rewarded. The team shall compete in 2 NE FIRST District Events in non-consecutive weeks as selected by the head mentors. These events shall be selected on the basis of distance, total team expense, timing, and availability. When the team is not competing it shall continue to meet regularly. These meetings shall be spent completing any tasks not completed in the Build Season in terms of robot construction, preparing the pit layout and other competition supplies, advertising the design of the completed robot, and executing all other relevant tasks.

## Competition Season

## Roles

### Driveteam

The drive-team will be selected prior to the first event of the official season by the mentors. This selection will be based upon tryouts.

1. When possible, these tryouts shall take place at a week 0 shakedown event.
2. When these tryouts are not possible, the mentors will make their decision based upon the traits and qualities each candidate possesses.

All members of the drive-team must satisfy the following requirements:

1. All members of the drive-team must have been an active member of the team for at least one prior year.
2. All members of the drive-team must have logged at minimum 40 hours of work during that Build Season.

### Driver:

- The driver is the one who will nominally control the drivetrain of the robot and all other functions delegated to them.

### Co-driver:

- The co-driver shall operate all other functions of the robot not controlled by the driver

### Human Player

- The human player shall function in the role explained in that year's FRC game manual

### Coach

- It is the duty of the coach to coordinate and lead the drive-team. They are to determine team tactics and strategies during competition both on and off the field. During competition they have the final say regarding any and all drive-team and robot decisions, as they are entrusted with the interests of the team.
- This position should be filled by a student member regardless of FRC regulations.
- A mentor can only be selected for this role by team vote.

- The mentors cannot initiate this vote.

### Safety Officer

- The Safety Officer at competitions is the same member who is the Safety Officer during team meetings.
- The Safety Officer's responsibilities stay the same and he or she must strongly enforce safety rules at competitions to prevent the team's disqualification.
- The Safety Officer is usually the Safety Captain.

### Schedule Tracker

- The Schedule Tracker keeps track of the times at which Aluminati competes and the names of the teams in the alliance and the teams we are competing against.
- He or she will notify the team members in the pit in 15 minute increments so that they can judge how much time they have to fix or improve the robot.
- This person will tell the Scouters which teams to scout out and talk to, and work with the coach.

### Scouts

- Scouters travel around to different teams to learn about how their robots work and their strategies. This information will be compiled and used in future matches.
- Scouters will also be equipped with "spec" cards detailing the main components and abilities of our robot.
- Scouters will work with the coach to come up with a strategy for the matches.
- Scouters will also sit in the stands during matches to see how teams are doing.
- The chief scout shall also be the team representative during alliance selection.

### Cheerleaders

- Cheerleaders are team members who sit in the stands and cheer on the team when we are competing and watch the other matches to determine which teams will more than likely be in the finals. Cheerleaders are important but team members should only take this job when they have no other duties to do.

### Mascot

- This person is head of the cheerleading team. He/she wears whatever the team designates as the costume and promotes our team.

### Battery Manager

- The Battery Manager is a team member who keeps track of the team's batteries.
- He or she will know which batteries are fully charged and ready for use.
- He or she will also know which batteries require charging and when those batteries will be available for use.
- This person does not have to remain in the pits at all times, but must continually check on the status on the batteries and have a battery ready for the next match each time we complete a match.

### Pit Boss

- Design the layout of the pit before each competition under guidance of an assigned mentor.
- Responsible for condition of the pit during competitions
- Keeps tabs on all tools and their locations.
- During breaks between matches, tidys the pit, replaces tools and equipment in their designated place and stows materials.
- Leads effort for the packing, setup, and organization of the pit.

### **Rules**

- All team members must sign the team Safety Contract, agreeing to be aware of, and adhere to safety guidelines in the official FIRST safety manual and Team 3555 rules.
- All team members must be courteous and respectful of other teams, FIRST personnel, staff members, other mentors, and all other persons. The team must behave presentably and respectably. During all events all student members and mentors shall act in accordance with the guiding principles and code of conduct of FRC.

- When not completing assigned tasks or if no tasks are assigned all student members are expected to actively participate in the event.
- If the team does not participate in the elimination rounds of an event, either voluntarily or involuntarily, the team is still expected to stay for the entire event and support the other teams.
- The whole team may leave an event early only if required to do so due to insurmountable logistical or legal issues.
- Individual student members of the team shall only be allowed to leave an event early due to health concerns or serious extenuating situations.
- Approval to leave an event early is at the discretion of the head mentors. If a student member is allowed to leave an event early that student's parents shall be asked to pick up the student from the event.
- All student member leaders and head mentors shall be mandated to attend all official events. Exceptions to this rule shall only be made in light of health concerns or other serious extenuating situations at the discretion of the other student officers and head mentors.
- The team must be aware of other teams' pit areas and walkway space, and must not obstruct any other person or space. Safety glasses must be worn in the pit areas at all times.

### **Post-Season**

- The team usually enters 1-3 post-season competitions such as Where is Wolcott, Battlecry, or Beantown Blitz
- Students improve, troubleshoot, and/or adjust the robot during this time

### **Summer**

- The team usually meets 1-3 times during the summer to plan and prepare for the fall

## **COMMUNICATION, COMPUTERS AND INFORMATION RESOURCES**

The team's primary method of contact is e-mail. Team members and parents may be sent information about meeting time changes, elections, upcoming competitions, etc. To contact the team, e-mail one of the following team leaders (replace '(insert)' with '@'):

- Dr. Cheryl Granger (Head Mentor): [cgranger@eosmith.org](mailto:cgranger@eosmith.org)
- Official Team Email: [frcaluminat@gmail.com](mailto:frcaluminat@gmail.com)

The team's official public website is [aluminati3555.org](http://aluminati3555.org).

The team's member-only website is [members.aluminati3555.org](http://members.aluminati3555.org)

The team uses Google drive for sharing information, online communication and collaboration. Members will need a Google account to access both the Google Drive and members-only website.

Access to the team Google Drive is granted by Dr. Granger, and to the members-only site by Mr. Sydie, after the Safety and Compliance contract is signed and membership is granted. Non-members and alumni will not be granted access to team-only resources.

Team computers, laptops and other electronic devices are available for use by team members at the school, competitions and other team events where required, for team learning and business only. These devices may not be taken home by any member unless approved by a Head Mentor. Members may not alter equipment, operating systems, software or passwords without express approval of the IT

## FORMS

The following forms must be completed and returned to Dr. Cheryl Granger, BY ALL MEMBERS, at the start of the new season.

1. Member Application and Information Form
2. Parent Form
3. Safety and Compliance Contract
4. FIRST Consent Form
5. Shop Competency Certificate

Every team member must have a shop competency certificate on file with Dr. Granger. It is the team member's responsibility to request their certificate from Dr. Granger, get sign-offs from shop supervisory mentors and return forms to Dr. Granger during the same meeting period. Members will not be allowed to use tools or operate equipment if a certificate with appropriate sign-offs is not on file.



## Family Form - FIRST Team 3555 Aluminati

**Parent/Guardian Information (1):**

Home Phone #. \_\_\_\_\_ Cell Phone # \_\_\_\_\_

Relationship to member: \_\_\_\_\_

Occupation: \_\_\_\_\_

Employer: \_\_\_\_\_

**Parent/Guardian Information (2):**

Home Phone #. \_\_\_\_\_ Cell Phone # \_\_\_\_\_

Relationship to member: \_\_\_\_\_

Occupation: \_\_\_\_\_

Employer: \_\_\_\_\_

**Skills Willing to Share with Team**

	Parent/Guardian #		Parent/Guardian#
Programming	1 / 2	Fundraising	1 / 2
Mechanical/Fabrication	1 / 2	Word processing/Computer	1 / 2
Accounting	1 / 2	Team Building	1 / 2
Marketing Skills	1 / 2	Administrative	1 / 2
Electronics	1 / 2	Photography / Videography	1 / 2

Sponsor and Fundraising Ideas:

**I can provide the following:**

- Food donations during build season [ ]
- Transportation to events [ ]
- Mentoring [ ]
- Special Topic Presentation [ ] \_\_\_\_\_
- Other [ ] \_\_\_\_\_

## SAFETY AND COMPLIANCE CONTRACT - Team 3555 Aluminati

All team members must read, understand, and by their signature agree to comply with guidelines in the latest official FIRST Safety Manual, FIRST Team 3555 Handbook and rules listed below.

1. Use safety glasses and any other necessary safety equipment or clothing at all times in designated work areas
2. Apply caution and common sense while working; respect and avoid distracting while observing or nearby others at work
3. Be responsible for proper care and maintenance and storage of tools and equipment
4. Stay sufficiently fed, hydrated, rested and healthy. Do not operate tools or equipment if tired or unwell.
5. Request and get permission from an adult in charge BEFORE using any tools or equipment in the classroom, shop or elsewhere in the school or designated work areas
6. Ensure that a mentor is present in the room and aware of your intention before starting any cutting, milling or drilling work
7. Wear suitable attire to use shop equipment (i.e. no open shoes or sandals, no baggy clothing, loose jewelry or untied hair, etc.)
8. Clean and tidy up after using any tools and materials in the shop
9. Report and clean up all spilled liquids immediately, using method and materials approved by an adult
10. Immediately shut down and report any strange noises, malfunction or failure of equipment to an adult
11. Only use a tool or piece of equipment belonging to the team or school after being fully instructed and tested (signed off) on its proper use by a mentor
12. Use all tools only for their intended purpose
13. Do not adjust or move any parts or knobs found on any piece of equipment in the workshop
14. Do not change any team computer settings, passwords, Google Drive files, websites or software, without prior approval.
15. Never leave a machine running unattended
16. Know the locations of emergency power shut offs. Power shut offs for emergency use only!
17. Immediately shut down and report any strange noises, malfunction or failure of equipment to an adult
18. Be especially careful when handling, keep away from flame and properly dispose of all chemicals such as inks, solvents, paints, developing chemicals etc.
19. No food, drinks etc in the shop area.
20. No headphones or loud music in the shop or classroom area. Members must remain alert and attentive.
21. Report all injuries, to yourself or others, immediately to a team mentor, no matter how slight.
22. Look out for the safety of fellow team members and always encourage safe conduct.
23. Student members must request approval from a supervising mentor before leaving a meeting, event or venue before the designated end time, whether alone, with a friend or parent.

I \_\_\_\_\_ have read, understand and agree to uphold and adhere to these rules; guidelines in the latest official FIRST Safety Manual and the mission, ideals and organization of FIRST and Team 3555 as presented in the team handbook. I acknowledge that safety is my responsibility, together with every other team member, at all times and in all venues. I am aware that any breach of this contract will be firmly dealt with and may result in consequences up to and including temporary or permanent suspension from the team.

Team Member Signature \_\_\_\_\_ Date \_\_\_\_\_

Mentor Witness \_\_\_\_\_ Date \_\_\_\_\_

## SHOP COMPETENCY CERTIFICATE - FIRST Team 3555 Aluminati

Every student must be properly trained and competency tested in the use of tools, materials, equipment and machinery in designated team work areas before being allowed to work without direct, observed supervision. Only mentors, previously approved by the mentor board to do so, may train members and sign the following.

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

Item Tested	Signature and Date	Item Tested	Signature and Date
Hacksaw		Power drill	
Hammer		Drill Press	
Chisel			
Soldering Iron			
		Reciprocating Saw	
		Band Saw	
		Bridgeport	
		Drill/Mill Machine	
		Metal Lathe	
		3D Printer	
		Laser Cutter	

## GLOSSARY

Servant Leadership - “The servant-leader *is* servant first... It begins with the natural feeling that one wants to serve, to serve *first*. Then conscious choice brings one to aspire to lead.” -- Robert K. Greenleaf

## REFERENCES

FIRST Website - <http://www.firstinspires.org/>

Youth Protection Program (YPP) - <http://www.firstinspires.org/youth-protection>

TIMS - <http://www.firstinspires.org/node/10626>

STIMS - <https://login.firstinspires.org/core/login?signin=cc23f469279d7cadf98cde20c3a8a5c9>

Team Website - <http://aluminati3555.org/>