Team 4 ELEMENT

Handbook

Table of Contents

Introduction

Team Introduction

Over the past ten years, *FIRST*® Robotics Competition Team 4, "Team 4 ELEMENT," has grown from a small robotics program to a team that houses almost 25% of HTLA's student population. High Tech Los Angeles (HTLA) joined the *FIRST* Robotics Competition to provide a place for creative minds to bring their ideas to life. Students take mathematical, project management, and engineering skills learned throughout the school day and manage technical and nontechnical aspects of a business-like environment in the after-school robotics club. Students are not required to have past experience with engineering or robotics before joining the team. Through the program, they will learn to think critically and to systematically approach problems.

ELEMENT is an acronym that stands for Engineering, Leadership, Entrepreneurship, Mentoring, Education, Networking, and Teamwork. Team 4 is represented by the team mascot, the Phoenix, and a blue and black color scheme.

Team 4 ELEMENT's top priority is providing team members with the skill set to successfully tackle difficult problems. The goal is to inspire the students to think like engineers throughout the process. Their thoughts and newly learned technical skills will help them form unique and creative solutions. Graduates of Team 4 ELEMENT leave with a skillset not only applicable to robot engineering, but also to areas such as project management, teamwork, time management, and marketing.

Team members are required to participate in different outreach activities in their community. This further develops our brand and outside connections with the real-world. This is one of the ways our team members gain marketing skills, speech skills, and teamwork skills.

Team Motto: "Soaring to New Heights"

FIRST

"For Inspiration and Recognition of Science and Technology"

FIRST is a non-profit organization with the mission to inspire high school students in STEM (Science, Technology, Engineering, Mathematics). It was founded by Dean Kamen, who is also the inventor of the Segway, in 1989. It has since grown to more than 6000 teams, and has spread to over 88 other countries such as Canada, Brazil, Great Britain, and Israel. *FIRST* also promotes the philosophy of "gracious professionalism," a term used to describe a code of behavior which values community, quality in work, and the emphasis on respectful behavior toward others.

In each *FIRST* Robotics Competition (FRC), teams from all over the world compete in a unique game created by *FIRST*. The rules of the game are revealed to the teams the first Saturday of January, in an event that "kicks off" Build Season. Build Season continues for six more weeks.

At the end Build Season the robots are sealed in a large bag until the first regional competition.

More details about "Build Season" in *Member Obligations*.

Team Leadership

Team 4 will utilize a system of student team leads who will be responsible for the operations of the team. Students who are interested will apply for an open position, submit a portfolio, and will be given an interview by mentor leadership. One applicant will be chosen for each position soon thereafter.

Positions available:

- Manufacturing Lead
- Electronics and Pneumatics Lead
- Programming Lead
- Design Lead
- Operations Lead

Note: Team Captain will be chosen from one of these candidates.

All lead positions will have the following minimum requirements in order to apply:

1. Minimum 3.0 GPA, with no D's or Fails
2. Two consecutive years on the team
3. Demonstrate basic understanding of machining
4. Demonstrate basic understanding of Solidworks
5. Demonstrate basic understanding of programming
6. Demonstrate thorough understanding of robot parts, function, and control
7. Demonstrate previous leadership skills including running Summer Camp
8. Demonstrate thorough knowledge of the FIRST Robotics Competition program

These minimum requirements will make for a well-rounded student who will succeed in any STEM career.
Once leads are chosen they will be placed on a probationary status and must fulfil certain requirements in order to keep their position.

These requirements are:

1. Organize a fundraising event or acquire a sponsor for a minimum of $500 (cash or in-kind.)
2. Take a college-level course in the field they are interested in.
3. Create and maintain a working relationship with another FRC team.
4. Maintain a training program for all team members in their respective department and contribute a new article to The Leaf periodically
5. Devote extra hours in the off-season to help the team.
6. Meet the minimum hours during the pre-season and build season per Team Contract requirements. Attend all mandatory meetings (barring emergencies.)
7. Document all accomplishments and organize in a portfolio. Include a brief description and summary of each item.
8. Acquire new mentors

Explanation of extra requirements:

- Fundraising events or sponsor acquisition can be done with another lead but must equal at least $500 contribution per lead. For example, two leads can work together on acquiring a sponsor, who donates at least $1000. This would fulfil the requirement of $500 per lead. Or 5 leads can put on a fundraising event, which brings in at least $2500. Or one lead acquires $500 worth of machining services from a sponsor.
- All events and sponsorship requests must be run through the mentors, with final approval from Mr. Babahekian.
- College classes can be taken at any local college or online.
- A working relationship with another FRC team is defined by both teams gaining an advantage in their goals for a successful season.
- Training programs must be documented with tangible goals and deadlines.
- Off-season work includes, but is not limited to, organizing and cleaning the shop/bin, upgrading current competition robot, and organizing and running Team 4 summer camps.

Positions will become official on Kickoff Day for each season.

Team Captain

Team Captain will be chosen soon after the leads are chosen. He/she will be chosen from the group of leads.
In addition to their department responsibilities, Team Captain responsibilities will include:

- Maintain productivity of the entire team
- Maintain training plans of each department
- Be an exemplary student
- Be an exemplary Team 4 member
- Demonstrate Gracious Professionalism at all times

- Attend ALL meetings and competitions
- Be a liaison between mentors and team members
- Support mentors in daily and weekly agendas
- Bring student concerns to the attention of the mentors

Mentors

Mentors are experienced adults who donate their time to mentor and help the team build a robot. They all serve as experts in their respective fields and help the team understand important concepts, provide feedback, answer questions, and assist with networking. Mentors are extremely important resources, and all team members are expected to treat them with the utmost respect.

- Arno Babahekian
- Maral Rostami
- Guy Chriqui
- Ali Ahmed
- Mitchell Karchemsky
- Emelie Oiknine
- Adam Garcia
- Rob Frankel

Competition and Travel

Regional competitions begin in late February and continue through April. The team will attend a minimum of two regional competitions per year. All students and parents are invited to local competitions. We can only have a certain amount of students under teacher supervision for out-of-town competitions, so a travel team is chosen for out-of-town competitions.

The travel team consists of the pit crew, scout team, and drive team. These crews are comprised of individuals solely based their attendance at our team kickoff event, hours contributed to the team, and ability to contribute to a successful event. These students are chosen by the team's mentors. When choosing the travel team, mentors will take into account the amount of productive hours put into the after school program and academic eligibility.

The pit crew consists of experienced team members, as well as inexperienced members in training. Veteran pit crew members should exhibit knowledge and ability to quickly and efficiently repair the robot during a competition, as well as mentor inexperienced team members. Eight to ten students are selected for the pit crew by the team's mentors, under the advisement of team administration.

The scout team consists of team members who will scout matches and rank each robot. At all competitions, robots are ranked based on their score ability ratings and win-loss ratio. The top 8 alliances choose other teams to form alliances of 3 teams, during the alliance selection process.

The Lead Scout guides and directs the other scouts during pit scouting and competition scouting. They organize all information and represent Team 4 ELEMENT during the alliance selection process of the competition.

With sufficient funding, all students will be provided with travel and lodging for out-of-town competitions, however the travel team may be required to pay some of the costs. Travel and lodging costs fluctuate, but can range from $200-$700 depending on the distance of the competition. Students will not be provided meals on trips, so parents should factor in the cost of food. Payment plans and financial arrangements may be available if the mentors are notified in advance.

Team Member Obligations

Team 4 ELEMENT members are required to perform all assigned tasks given by team leads or mentors. Students are required to use their skills to the best of their ability to complete their assigned task. Students should seek out help from more experienced team members when necessary. Veteran team members are always around to help inexperienced team members gain new skills. No tasks should be left incomplete without informing a team lead or mentor. If more assistance is needed to complete a task, leads will help delegate parts of the project to more students, to assist with its completion.

There are no monetary dues for membership. Members are required to purchase at least one team shirt; please speak to Mr. Babahekian if this is a financial burden. Additional merchandise may also be purchased at various times throughout the year. The team shirt serves as the team's uniform during competitions. Members are also required to have their own pair of safety goggles.

Members who do not have a pair of safety goggles will not be able to participate in the machining and construction of the robot. Team members are also required to bring their own pair of safety goggles to all team events and competitions.

Members are required to keep a minimum 2.0 GPA, and are required to have no more than one (1) Fail or D on any 5-week progress report. Students with low grades are not eligible to take part in any extracurricular activities. They will be dropped from the team and banned from meetings. It will be expected and encouraged from these students to attend tutoring and bring their grades back up before they are considered to rejoin the team at the end of the semester.

Members must spend at least 4 hours a week in the after school robotics club during preseason and 6 hours a week during the build season. Students must be working efficiently on robot related tasks during the hours spent in the lab. Students not contributing will be asked to leave. Students must attend all mandatory meetings. At the end of build season, hours will be added up; the top 30 students with the most amount of hours will be allowed to join the team on our trips. Attendance will be evaluated every week, and students who do not maintain the minimum number of hours will be removed from the team. Students who do not participate as productive team members and work as hard as mentors will be removed from Team 4 ELEMENT.

While attending a robotics meeting, team members must maintain a certain level of work ethic. Low work productivity during time spent at robotics is grounds for removal from the team. If team

members find themselves idle while at a meeting, they may either find a useful task or sign out and leave. It is expected that all members utilize their limited time in robotics wisely.

All students will be required to sign in and out at after school meetings. An automated timekeeping system will be used to track a student's hours.

Members are required to contribute their time and effort to all fund-raising events of the team. The expense of building the robot, registering for competitions, and funding other team expenses will exceed $30,000, so fundraising is essential to the team's survival. This year's goal is to raise at least $60,000.

Members are always expected to uphold the spirit and values of Team 4 and those of *FIRST* Robotics. Therefore, members are expected to attend all community service events. Failure to participate in Team 4's community service activities will result in losing the privilege of travelling with the team.

Members are expected to follow all school rules during and after school, and are expected to be exemplary models for student behavior. Members will not engage in inappropriate or discourteous behavior while on campus or on trips. Members are to be respectful toward fellow students, teammates, mentors, and parents.

Parental Obligations

Parents are urged and highly encouraged to attend the parent meeting at the beginning of the year. Parents are needed to help at the team kickoff event if possible. Parents are asked to provide a meal for the team's dinner break at least one night during build season. Depending on the team's size, parents should expect to feed 30-50 students. Please take dietary restrictions and allergies into account. Drinks and utensils should be included.

Interested parents are more than welcome to come to team meetings. We are always looking for new mentors, both technical and non-technical.

If parents are unable to fulfill these obligations, they should notify the team's mentors.

Detailed Information

Safety

Working on robots inside and outside of the machine shop comes with the risk of danger. All students are required to follow ALL SAFETY DIRECTIONS inside and outside of the machine shop and robotics lab, as well as any directions given my team leads, mentors, or administration. Failure to abide by these guidelines may result in removal from the team. Safety is our number one

concern and we do not risk jeopardizing any team member's safety, appendages, life, etc. First aid is available in the machine shop and robotics lab for all students.

Communication

All team members are required to check their student emails, team website, team Slack, team blog, and team Facebook Group and Page for team updates. Students who do not keep updated will miss out on mandatory team events and will lose their privileges.

Authority of the Handbook

Team Leads and Mentors, upon reaching a consensus may modify the handbook at any time. Team members will be notified of any and all modifications.

Team 4 ELEMENT

2016-2017 Student and Parent Contact

I. I have read and understand the 2016-2017 Team Handbook.

II. I understand that Robotics is an extracurricular activity, and is not a priority over school. Low grades will be taken seriously, and academic ineligibility will result in the removal from the team.

III. I agree to use all tools and machines in a safe and professional manner. I understand that the ability to use any and all tools provided by the team or HTLA is a privilege, not a right.

IV. I will maintain an active presence on the team by attending at least the minimum number of days, in addition to all community service, outreach, and fundraising activities.

V. I will purchase a pair of safety goggles as part of the Team 4 ELEMENT safety requirements.

VI. Students will be admitted on the team upon return of the contract, and may not participate in activities until the contract is returned.

VII. All contracts will be due September 14 by 6:00 PM

Print Student Name: _____

Student Signature: _____Date: _____

Student Cell Phone: (_____)_____ Student Grade: 9 10 11 12

Print Parent Name: _____

Parent Signature: _____Date: _____

Parent Phone: (_____)_____ Parent Email: _____

(Please write legibly)