

TEAM 4 E.L.E.M.E.N.T.

2014-2015 SEASON

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# Team Handbook



September 15 2014

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# **1 Introduction**

## **1.1 Team Introduction**

This is Team 4 ELEMENT Robotics! Welcome. In 2005, Wendy Wooten, with Team 22, founded Team 4. 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 mathematics, 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 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 turquoise and black color scheme.

Team 4 ELEMENT's top priority is providing team members with the skill set to systematically approach difficult problems and ensure they have the tools to successfully tackle them. 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 Robotics leave with a skillset not only applicable to robot engineering, but with project management, teamwork, time management, and marketing skills as well.

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.

## **1.2 FIRST Robotics Competition**

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, the inventor of the Segway, in 1989. It has since grown to more than 5000 teams, and has spread to 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 around the world compete in a 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.

## **2 Team Leadership**

Team 4 utilizes a system of Team Leads that are responsible for a certain aspect of the team. Leads are selected at the end of each season by team mentor administration. For example, the team Programming Lead is responsible for making sure all of the programming for the competition robot is completed. They are also responsible for teaching the necessary skills to programmers on the team. Each team member will be required to have the skills to design in our CAD program, Solidworks, and will be trained by mentors and veteran team members to have a general level of knowledge for all aspects of the robot.

The 2014-2015 robotics season leads are listed below.

### **2.1 Team Captain / COO - Avak Archanian**

The COO will serve as the non technical lead in charge of everything that is not the robot including, but not limited to: team logistics, fundraising events, team bonding, community outreach, and team finances

## **2.2 Team Captain / Lead Engineer - Maddie Magno**

This role serves as the technical leader in charge of everything that is the robot. The role includes but is not limited to: overseeing the part management system, maintaining the manufacturing schedule, managing the Gantt chart, setting the order list, and working with sponsors to get parts made.

## **2.3 Manufacturing - Avery Kane + Adam Shrager**

The Manufacturing lead is responsible for maintenance of all the machines in the shop and ensuring all parts are completed to spec. This means going through and measuring every part after the machinist has completed it and signing off on the drawing as well. In addition they are responsible for training on the machines and shop safety.

## **2.4 Public Relations - Rachel Alaynick + Ram Zallan**

This position has three main functions: team to sponsor communication, communication with other teams in FIRST, and community outreach. The functions of team identity go hand in hand with this position so the position will also be responsible for social media and team branding.

## **2.5 Programming - Christian Locker + James Kradjian**

The programming lead is responsible for the robot code. This includes a working drive code, manipulator function, and autonomous mode. Programming is a full time teaching/working position where the lead will have to not only get their own work done but ensure the upcoming programmers are constantly learning more.

## **2.6 Electronics - Sidney Ortega**

The Electrical and Pneumatics lead is responsible for all electrical systems on the robot. This includes procuring batteries and all wiring for the robot as well as drawing full electrical system layouts. In addition to electrical systems the lead is responsible for the pneumatic systems on the robot. Ensuring that all tubing is routed correctly and we are safely operating our pressurized pneumatic system. This lead will work with the mentors to spec correct pneumatic cylinders for robot actuation.

## **3 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 - Head Teacher and Team Sponsor (mr.b@ht-la.org)

Guy Chriqui - Lead Mentor and Former Member of Team 4/22/254 (guy.chriqui@gmail.com)

Rafi Ahmed - Mentor and Former Member of Team 22/4

Ali Ahmed - Mentor and Former Member of Team 22

Bobby Tift - Mentor and Former Member of Team 254/100

## **4 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 and scout crew. These crews are com-

prised of individuals solely based on their attendance at our team kickoff event, hours contributed to the team, and ability to contribute to the pit. These students are chosen by the teams mentors. When choosing the travel team, mentors will take into account the amount of productive hours put into the after school club 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 students are selected for the pit crew by the teams mentors, under the advisement of team administration.

The scout crew 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 scoutmaster guides and directs the other scouts during pit scouting and competition scouting. He organizes all information and represents Team 4 ELEMENT during the alliance selection process of the competition.

All members of the travel team are required to pay their own travel expenses. Transportation and lodging costs fluctuate, but can range from \$300 to \$700 per student, depending on destination and method of transportation. Students will not be provided meals while on trips, so parents should factor in the extra cost of food. Payment plans and financial arrangements might be available if the mentors are notified ahead of time.

## **5 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. The team shirt serves as the teams 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.

As part of the process of joining Team 4, each team member is required to participate in an interview.

Members are required to keep a minimum 2.0 GPA, and are required to have no Fails or Ds 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 the next semester.

Members must spend at least 2 days a week in the after school robotics club during preseason and 3 days a week during the build season. Students who show up more than the minimum 2 days a week during the preseason and 3 days a week during the build season will be rewarded with double time. 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 month, 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 using our team kiosk. At the beginning of the season, all students will have their fingerprint added to the team



database. This is used to track hours and to sign in and out of robotics. If a student signs in but does not sign out when the leave for robotics, his sign in time stamp for that day will be erased like the student was never at robotics that day. Student hours will be ranked in a leader board spreadsheet and available for team portal display on our team website.

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 fund raising is essential to the teams survival. This years goal is to raise at least \$60,000. The student who raises the most amount of money past the required minimum amount will get their travel expenses waived.

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 4s community service activities will result in removal from 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.

## **6 Parental Obligations**

Parents are obligated to attend the mandatory parent meeting at the beginning of the year.

Parents are required to help at the team kickoff event (the first Saturday of January).

Parents are asked to provide a snack for the teams nutrition break at least one night during build season. Depending on the teams size, parents should expect to feed 30-50 students. Please take dietary restrictions into account. Drinks should be included.

Parents who are interested are more than welcome to come to team meetings.

We are always looking for new mentors technical and non-technical.

If parents are unable to fulfill these obligations, they should notify the teams mentors.

## **7 Details**

### **7.1 Saftey**

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 members safety, appendages, life, etc. First aid is available in the machine shop and robotics lab for all students.

### **7.2 Communication**

All team members are required to check their student emails, team website, team blog, team accounts portal, and team Facebook Group and Page for team updates. Students who do not keep updated will miss out on mandatory team events and will be removed from the team.

## **8 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 E.L.E.M.E.N.T.

## 2014-2015 STUDENT AND PARENT CONTRACT

- I have read and understand the 2014-2015 team handbook.
- I understand that Robotics is an extra-curricular 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.
- 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.
- I will maintain an active presence on the team by attending at least the minimum number of hours, in addition to all community service, outreach, and fundraising activities.
- I will purchase a pair of safety goggles as part of the Team 4 ELEMENT safety requirements.
- Students will be admitted on the team upon return of the contract, and may not participate in activities until the contract is returned.
- All contracts will be due Thursday, September 18 by 6:00 PM

Print Student Name: \_\_\_\_\_

Student Signature and Date: \_\_\_\_\_

Student Cell Phone: \_\_\_\_\_

Print Parent Name: \_\_\_\_\_

Parent Signature and Date: \_\_\_\_\_

Parent Phone: \_\_\_\_\_

Parent Email: \_\_\_\_\_