



SLHS Robotics - RoboSpartans

Competing since 2013

Team Handbook 2018 – 2019

[www.team4639.org](http://www.team4639.org)



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## 1. Introduction

This handbook is supplied as a primary source of information for members of the SLHS Robotics Team, their supporters and families. The contents of this handbook are current as of August 1, 2017. Details may change as the year progresses – in particular, meeting schedules.

SLHS Robotics – aka RoboSpartans - is a multicultural team of students engaged in bringing a passion for math, science, engineering and computing to our community and to Seven Lakes High School, by participating in yearly FIRST® and VEX Robotics competitions, mentoring younger children and community outreach. Through these experiences, we are learning important skills that will aid us in becoming outstanding professionals.

What will you get? World Wide Recognition! Amazing skills! Qualify for millions in college scholarships. Experience design, programming, teamwork, strategic thinking, Cooperation and Competition. Improve your problem solving skills. Increase time management and conflict resolution skills. Learn and use sophisticated software and hardware. Share with teams around the world. Participate in local and regional competitions.

## 2. Team History

In 2012, a group of students from Seven Lakes High School decided to participate in FIRST Robotics program (<http://www.firstinspires.org/robotics/frc>), as FRC Team 4639. The first year, we had a membership of about 25 students, we built on school grounds and used SLHS themes to market the team. Since then, we have moved our build-site to the Robert Shaw Center for STEAM (<http://www.katyisd.org/dept/rsc>). In 2015, we were so excited with the participation of almost 60 students and by 2016, we had over 90 students join the RoboSpartans! It has been a challenge for us. We started competing in the UIL State Championship in 2016 and were Runner Up State Champions for 2017-2018!

In 2014, the Robotics club started two (2) VEX Robotics teams, VRC Teams 3532A and 3532B. They won multiple awards and championships during the 2017-2018 season. We have found that VEX Robotics (<http://www.vexrobotics.com/competition?ref=hometile>) is an excellent starting point for the students interested in Robotics.

Since 2012, our team has participated continuously in several FRC in- and off-season events. We've also participated in technology-oriented community outreach programs organized by Katy ISD.

## 3. Team Partnerships

Without the support of our family of sponsors, SLHS Robotics would not be able to compete in regional and off-season events.



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We appreciate the following organizations for the funds given in the past and present:

**NALCO Champion**  
An Ecolab Company



**Rockwell  
Automation**



**iEdu.**  
Illuminating Young Minds

**Schneider  
Electric**

**Schlumberger**



Seven Lakes High School



Katy Independent School District

These sponsors can be found on our website, robots, team banners and other marketing materials which are displayed at competitions, outreach events and other public appearances.

#### 4. Team Leadership Positions

SLHS Robotics, also known as FRC Team 4639, consists of students from Seven Lakes High School. Adult team members include teachers along with engineers and parents. In addition, some students upon high school graduation continue to volunteer their time as mentors.

The positions are outlined on the organization chart in section 7.

#### 5. Team Membership Requirements

##### 5.1 Grades

To be part of the Robotics team, it is required to be passing all of your classes.



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### 5.2 Fundraising & Outreach

Fundraising and outreach are a requirement of all team members. These funds are needed to purchase the robot kit, parts and materials, competition registrations and travel expenses. Outreach is a component of many of our grants and helps us promote STEM in our schools and communities.

Our Robotic Club is 100% Team Fundraising...! Help us do the very best job we can to represent our city / state, and our sponsors at the different events, including the VEX and FIRST Robotics Competition! Every donation received is an investment in the future engineers and entrepreneurs of tomorrow. If you are interested in more information, just contact us!

### 5.3 Meetings

From August - December, the team meets twice a week (days and time to be determined) unless participating in fundraising, outreach or a competition. There is not a set agenda for these meetings, just a time for the students to come in and learn the basics of building a robot. There will also be occasional training in specific areas of CAD, Mechanical, Electrical, and Programming along with training on using the machines in the large bay.

Most of the club activities and meetings are held in the Robert R. Shaw Center for STEAM (<http://www.katyisd.org/dept/rsc/Pages/default.aspx>) located at:

1730 Katyland Drive  
Katy, TX 77493

There will also be some meetings at SLHS after school hours.

### 5.4 Participation Requirements

Team members are expected to attend regular weekly meetings at the STEAM center, training sessions, safety meetings, outreach events, etc. Participation is key in the success of our team. Team members must have **40 hours of participation and complete two outreach events in order to be eligible to travel to competitions.** Additionally, **they must pass a mock game test in order to work on the robot during build season.** **First year members must also attend two VEX competitions during the Fall semester.**

### 5.5 Behavior Standards

All students are expected to adhere to the Katy ISD Discipline Management Plan and Student Code of Conduct. In addition, sponsors and coaches of extracurricular activities, including but not limited to honor societies, Student Council, cheerleaders, dance teams, theatre art groups, choirs, interscholastic athletics, and marching band, may develop and enforce standards of behavior that are higher than the Katy ISD Discipline Management Plan and Student Code of Conduct and may condition membership or



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participation in the activity on adherence to those standards. Extracurricular standards of behavior may take into consideration conduct that occurs at any time, on or off school property.

### 5.5.1 Conduct and Sportsmanship

Students are expected to exhibit the highest standards of good conduct and sportsmanship at all times. As spectators or participants, students represent not only themselves, but their school, parents, and community, and any improper action reflects discredit upon all aspects of community life. The Katy ISD Discipline Management Plan and Student Code of Conduct is in effect on all Katy ISD properties and at all school-related or school-sponsored events occurring on/off school property.

Any student member of an extracurricular organization or campus club (e.g. band/dance team/cheerleader/athlete/Student Council, etc.) representing themselves, or their organization, in an unfavorable, questionable or illegal manner through electronic media (i.e. Websites, personal home pages, blogs, text messages, chat rooms, or similar Websites/files accessible through a server or internet) or using electronic communication devices (i.e. camera phones, digital photos, electronic descriptions) in such a way as to bring discredit, dishonor, or disgrace on their organization or members of any other school organization including themselves will be subject to the disciplinary actions determined by appropriate school officials and/or organization sponsors/directors/coaches, including probation or dismissal from the organization.

### 5.5.2 Public Displays of Affection

In order to maintain a mature and respectful atmosphere, students are reminded that public displays of affection are considered unsuitable in an educational setting. These displays could be defined as kissing, embracing, and/or other forms of physical fraternization, and are subject to disciplinary action as stipulated in the Katy ISD Discipline Management Plan and Student Code of Conduct.

### 5.5.3 Bullying and Disrespectfulness

**Any student that bullies another student or is disrespectful to any mentor, parent volunteer, or RSC personnel may be subject to immediate removal from the team.**

## 5.6 Student Involvement

SLHS team members have many opportunities to get involved. The areas of opportunities for students are outlined in the organization chart in section 7. In the fall, they can participate in FRC offseason events, VEX Robotics Competitions, fundraising and outreach events and meetings. Starting in January (Build season) the frequency of team meetings will increase. In order to qualify to travel with the team to competitions, students are required to meet the grade (section 5.1) and



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participation requirements. We currently attend two (2) FRC Regional events (Lone Star Regional and one out-of-town regional) which are held between February and April, and our goal is to compete at the *FIRST* World Championship which is held in April and at the UIL State Championship in Austin in May. We are also planning to attend a few VEX Robotics competitions around Houston.

There are many other things that you can do: Video/ Photography, Animation, Graphic and Website Design, Social Media, Outreach, Public Relations, Team Organization, Fundraising, Team Spirit, Business Planning, Coordination, Shipping, travel arrangements and much more!

### 5.7 Parent Involvement

Parental involvement is essential to the club. We have to have 2 parents or mentors at the STEAM Center in order for the students to be allowed to meet and work there. These parents must go through basic safety training and pass a simple test in order to serve in this capacity. They must enforce the safety rules of the STEAM Center as listed in Section 9. **Each Student's family must participate in 4 activities each school year** that can include chaperoning a trip, providing a meal during build season or supervising students at the STEAM center. **Parents of students in leadership positions are expected to be more active and volunteer at the STEAM center at least once a week.**

We also need parents to help out with transportation and travel arrangements, food during Build Season, and mentoring the students in any of the areas listed in Section 7. The efforts of these volunteers must be student-focused and within the spirit of *FIRST (Gracious Professionalism)*.

### 5.8 Adult Mentors

Adults/parents volunteer their time to act as coaches, mentors and non-engineering mentors (<http://firstnemo.org/>) by working with the students after work hours and on weekends.

Our team motivates students from all walks of life to employ the skills they have learned in school for real-life experiences. The team has been driven by the students with adult mentoring. The students with some experience have served as mentors for the other students. We are looking for mentors with FIRST and VEX experience and hands-on skills, but this is not a limitation. The commitment is flexible enough to encourage the mentor's participation. Mechanical and Electrical engineers would be helpful. Our team is looking for mentors willing to help us in any of the following areas:

- ✓ Sharing real world experience.
- ✓ Preparing some training or chat sessions with specific topics. We have an initial training plan with some topics. This information is available upon request.
- ✓ Participating in build sessions to facilitate the robot design.



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- ✓ Attending to any of the competitions / events to get understanding about Robotics and improve our team.

### 6. Schedules/Forms

#### 6.1 Team Schedules

Please refer to the team website ([www.team4639.org](http://www.team4639.org)) for the upcoming schedule of events including meetings, classes and competitions located on the team calendar.

#### 6.2 Forms

All forms are located in our website (<http://www.team4639.org/resources.html>). Students are required to fill out the forms and turn them in prior to the deadlines associated with each form in order to be in good standing with the team. Students must also complete safety training by October 15, 2018 in order to participate in team activities. Please complete and return all forms:

- ✓ Student Membership – September 15, 2018
- ✓ Build Site Waiver – September 15, 2018
- ✓ Transportation Form - October
- ✓ Submit FIRST STIM Electronic form – September 15, 2018 – See Section 6.3
- ✓ VRC Participant Consent Form –September 15, 2018
- ✓ FIRST in Texas Photo Release Form - September 15, 2018
- ✓ Sign-up for Email group and Remind – September 15, 2018 – See Section 9

Parents are required to fill out the forms and turn them in prior to the deadlines associated with each form.

- ✓ Parent Booster Club Membership – September 15, 2018
- ✓ Approve Student FIRST STIM Electronic form – September 15, 2018 - See Section 6.3
- ✓ Sign-up for Email group and Remind – September 15, 2018 - See Section 9

#### 6.3 FIRST STIM Students Registration

To facilitate the submission of a team roster at *FIRST* events, Students must register online as a team member of FRC Team 4639 and complete the electronic version of the *FIRST* Consent and Release form at [https://my.firstinspires.org/AccountManager/Account/ Register](https://my.firstinspires.org/AccountManager/Account/Register). You will find more information about signup process here <http://www.firstinspires.org/resource-library/youth-team-member-consent-and-release-form>.

Parents will receive a confirmation email to complete the *FIRST* Consent and Release form electronic signature process.





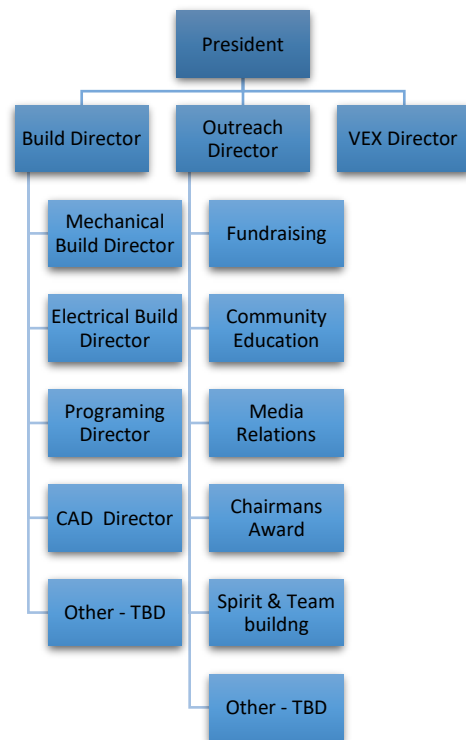
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## 6.4 Mentors Registration at FIRST

Mentors are encouraged to complete an electronic version of the *FIRST* Consent and Release form at <https://my.firstinspires.org/AccountManager/Account/Register>. Starting 2014, the main and alternate coaches shall complete the *FIRST* Youth Protection Program (YPP) screening/clearance process. *FIRST* encourages all mentor to complete the YPP screening/clearance process. You will find more information about signup process here: <http://www.firstinspires.org/resource-library/youth-team-member-consent-and-release-form>.

## 7. Organization Chart



### 7.1 Student Board Roles and Responsibilities

#### 7.1.1 President

- The President is the face of the club to Katy ISD, SLHS & outside organizations.
- Oversees club activities including build and outreach activities.
- Networks with other teams.
- Define overall activities for the year including competitions and outreach events with Build and Outreach Directors.
- Ensure new members are involved.
- Coordinate with the school and other clubs at school for events.
- Approve and be aware of the budget-vs-actual throughout the year.

#### 7.1.2 Build Director

- Prepare Build budget.



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- Manage subgroups.
- Manage Inventory.
- Define training needs for build group.
- Create timeline for build.
- Define Design.
- Define Strategy.
- Manage Safety Program.
- Monitor expenditure budget-vs-actual

### 7.1.3 Outreach Director

- Prepare Outreach budget.
- Communicate with sponsors.
- Manage Fundraising chairperson:
  - i. Procure new sponsorships.
  - ii. Procure new donors.
  - iii. Organize fundraising events.
- Manage Media Relations chairperson:
  - i. Publish newsletter.
  - ii. Maintain website.
  - iii. Submit articles to local publications
- Manage Community Education chairperson:
  - i. Elementary school programs, 8th grade night, Fish Camp, Spartan Spectacular
  - ii. Jr. High robotics clubs
  - iii. Girl Scout & Boy Scout Groups
  - iv. iEducate program
  - v. Onslow
- Manage Chairman's Award Chairperson:
  - i. Work with all Outreach chairpersons to produce the chairman's presentation
- Manage Spirit & Team Building chairperson:
  - i. Determine and prepare plan for competition team spirit
  - ii. Organize club social events.

### 7.1.4 VEX Director

- Develop VEX budget
- Manage subgroups.
- Manage Inventory.
- Define training needs for build group.
- Create timeline for build.
- Define Design.
- Define Strategy.
- Manage Safety Program.
- Monitor expenditure budget vs. actual



### 7.2 Student Board Election Process

The Student board will be elected during May. The three top positions will be voted on by the club members. Lower levels in the organization will be further defined and appointed by mentors & elected officers.

Any student who has been an active participant in the Robotics Club for two years is eligible to be nominated for one of the four positions, including President, Build Director, and Outreach Director. If no qualified students nominate themselves for one of these positions, a student who has been an active participant in the club for one year will be eligible to be nominated for that position. **Students participating in any other conflicting extracurricular activity will be ineligible to run for an elected leadership position.**

Individuals can nominate themselves via email to designated Mentor. Students may nominate another qualifying club member if that person accepts the nomination. Self-nominations take precedence on the nomination list. The designated Mentor will publish nominated students in alphabetical order for each position.

Mentors will manage the election and announce those voted into office on the Election Day.

The Election Day will be notified by the mentors with two (2) weeks in advance. If any student is unable to attend at this day, they can email their vote to the designated Mentor and it will be counted. The students will be voting one position at the time. Once the position is filled out, the name of the elected student will be removed from the next election on those cases where the student is nominated for two different positions.



## 8. Safety Rules for the RSC Steam Center

Students must abide by all the team rules and those rules specific to the STEAM Center. Failure to comply and /or disregarding Mentor/Parent direction can result in removal from the team.

### **Katy Independent School District Robert Shaw Center for STEAM (RSC) Site Safety Rules**

#### **Specific Safety Requirements**

- **Adult Supervision:** Students are allowed inside RSC only when a KISD employee and at least approved mentors (who have been trained) are present. Under no circumstances should one adult mentor be alone with one student in the bay areas or flex room. An adult will secure the building when each work session is complete.

1. Please provide us with a list of adults who have attended the basic safety training.
2. Students should not be in the bay while mentors are in meetings. Student alumni are not classified as adult mentors.
3. Small children visiting the RSC must be accompanied by an adult at all times.

- **Safety Glasses Requirement:** Safety glasses (OSHA Z-87.2) shall be worn at all times in the individual team work bays, within 5 feet of the central practice field, and in the common shop area when any work or practice is in progress. Safety glasses must be clear or lightly colored so the eyes can be seen. Side shields are required. Normal prescription glasses with side shields are not adequate to satisfy this requirement.

1. Everyone in the bay must have safety glasses on. We will help you set up areas just outside of the bay for those needing space to do computer work without safety glasses. Our determination is that we are at risk if we allow some not to wear glasses in the work bay.
2. These rules apply to all build activities including Vex.

- **Shoe Requirement:** Substantial, closed-toed shoes shall be worn in all work areas and within 5 feet of the central field area of the RSC. Flip-flops, sandals, flats, "Crocs", and other footwear that has open holes through which metal shavings can enter or thin, easily-penetrated soles shall NOT be permitted.

- **Other Personal Protective Equipment (PPE) Requirements:** Ear plugs, face shields, gloves, and other appropriate personal protective equipment shall be used in specific shop areas defined by KISD and building administration. Compliance with the specific requirements is mandatory. Use gloves when handling materials with sharp, cut edges.

- **Loose Clothing and Hair Requirements:** Loose clothing and jewelry shall not be worn when working with power tools. Do not use long-sleeve clothing when using power tools. Long hair shall be tied back or otherwise restrained so it cannot get caught in power tools.

1. Hoodies are loose clothing. The sleeves are loose and they frequently have drawstrings that can get caught in tools.

- **Open Flame Limitations:** No open flames shall be used in the building.

- **Shared Shop Large Machinery:** An adult mentor must be present with students when using the large machines in the shared shop.

- **Training Requirements:** No one shall use a power tool or the plasma cutter without proper training in the safe use of the equipment. This includes all mentors and team members working in the RSC. Training will be scheduled at specific times or you can work with someone who has been trained in use of the tool. Teams may have selected individuals and mentors trained by KISD in use of the tools and those individuals can then train other team members.

1. There is not a strict requirement requiring adult supervision in the back of bays but please, please make sure that students are safe in those areas.
2. There should be a trained mentor per large machine. One mentor for both machines is not enough.

- **Team Safety Programs:** Within their own bay, a team may establish additional safety rules and a safety program that are more stringent than those for the facility in general; but may NOT adopt rules that are less stringent.

- **Housekeeping Requirements:** All areas of the building shall be kept clean and uncluttered. Clutter and poor housekeeping are considered



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a safety issue as they increase the risk of fires or accidents and can block egress in an emergency.

1. Care should be taken to vacuum the carpet properly to get metal shavings up. 2. Never have anything such as a computer touch the glass on the drive stations. Please do not clean with a paper towel.

- **Chemical and Paint Usage Limitations:** To avoid fire and inhalation hazards, use of chemicals, paint, and other materials which emit vapors within the building shall be limited. If significant painting or other odor-emitting work is required, it shall be done outside the building or in a designated area. Wear rubber gloves when handling chemicals or lubricants. A team shall use materials in accordance with the usage instructions and shall have a material safety data sheet (MSDS) available for each material.

- **Incident Reporting Requirements:** All incidents which result in an injury, fire, or damage to people or equipment shall be reported immediately to the on-site KISD representative and/or a mentor. This even includes minor first aid cases, like an injury that requires a Band-Aid.

- **Team Training Requirements:** Individual teams are expected to ensure all team members know and comply with the safety rules. If a team member goes to another team's work bay, that person is expected to comply with the safety rules of the team they are visiting.

### **Additional Rules for Building Use and Safety**

- No horseplay or rowdy behavior is allowed in the building.

- No food, juice, or sugary drinks are allowed in team work bays, or in the common shop area. Water is permitted with caution in the team work bays. Food and drinks should only be consumed in the central bay, flex rooms or outside the building. No drink other than water is allowed in the flex rooms.

- Be courteous to your neighboring teams.

- If any issues/problems arise, contact the KISD representative or a mentor immediately.

- Visitors – (Visitors are allowed for robotics related purposes such as recruitment, publicity or practice. Visitors may not work with the equipment.)

- Safety considerations for building access:

- o Please notify Katy ISD representative if you have a need to prop open the back door. Please exit the building through the front door.

- **Good daily housekeeping practices:** Start cleanup 15 minutes before the end of the session. Clean your area before you leave - do not leave it for the last person or the person coming in the next day. Pick up trash and bag it. Take the bags to dumpster, if required. No student should go alone to the dumpster; use the buddy system. Put recyclable materials in proper bins. Sweep or vacuum floors as needed. Put tools, materials, and other items in proper place when finished using them. Clean up shavings or any mess you may have made outside your teamwork bay. Do not leave water bottles or other trash outside the front door. Make sure all power is turned off at the end of the day. Please clean the kitchen area if you have used it. Do not leave food in the refrigerator. Ask before using any supplies in the kitchen area including the cabinets. Teams should keep coffee supplies for the Keurig in their bay. Ask before using any supplies in the storage area.

- Always use the proper tool for a given job - when in doubt, ask a mentor or the KISD representative.

- Always check to be sure a tool is in good working condition before use. If a tool is not in good condition, do not use it until it is fixed. Notify a mentor or KISD representative and put a sign or tag on the tool indicating the problem.



### 8. Travel Rules

Students must abide by all the team rules and those rules specific to traveling to competitions. Failure to comply and /or disregarding Mentor/Parent direction can result in removal from the team.

- Be courteous and respectful at all times - you are representing SLHS and Team #4639
  - All school policies still apply when traveling
  - You must be passing all classes at the time of the trip to attend. All money is non-refundable.
  - Every person on the trip must have the GroupMe app on their phone - you will be expected to know any information texted there.
  - Respect other guests in the hotel - no running in the halls, door slamming or loud voices.
  - No boys in girls' rooms and no girls in boys' rooms.
  - No vandalism at any time, anywhere.
  - Never go anywhere alone - always travel in a group. Be sure to let a chaperone know where you are if you are not in the immediate competition area.
  - Students may not leave the group at any time to return to the hotel, sightsee, or go to the convention center unless accompanied by a chaperone.
  - No room charges for movies, meals or long distance calls are allowed by students.
- If infractions of the travel rules occur, arrangements will be made to bus the student home at the parent's expense and the student will not be allowed to travel with the team in the future.

### 9. Contact Information

Website: [www.team4639.org](http://www.team4639.org)  
Email address: [slhsrobotics@team4639.org](mailto:slhsrobotics@team4639.org)  
Email Group: Send Email to [enews+subscribe@team4639.org](mailto:enews+subscribe@team4639.org)  
Remind (SMS): To receive messages via text, text @slhsr2016 to 81010.  
You can opt-out of messages at any time by replying: 'unsubscribe @slhsr2016'.  
Trouble using 81010? Try texting @slhsr2016 to (281) 769-5842 instead.  
Facebook page: <https://www.facebook.com/RoboSlayers>  
Twitter: @RoboSpartans  
Build Site Robert R. Shaw Center for STEAM  
1730 Katyland Drive, Katy, TX 77493  
Bay 4 at the STEAM Center (281) 396-7684



Acknowledgement of Acceptance

By signing below, the parent and student acknowledge they have read the team handbook and will abide by its contents.

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

Student: \_\_\_\_\_

Date: \_\_\_\_\_

**Please return this page with the membership folder.**