



**3
1
9
3**

**FALCO TECH
AUSTINTOWN, OH**

2014 – 2015 Falco Tech Handbook

Table of Contents

Table of Contents.....	2
Introduction	4
Mission Statement.....	4
Team Eligibility	5
Who Is Falco Tech?.....	5
Team History	6
Leadership Team	7
What We Do.....	7
Design Team	8
Build Team.....	8
Support Team	8
Programming & Controls.....	9
Pit Crew	9
Drive Team	9
Scouting & Strategy	9
Outreach.....	9
NEOFRA	10
Member Obligations.....	11
Grades	11
Study Tables.....	11
Meeting Attendance.....	12
Mandatory Meetings.....	13
Team Participation Fees.....	13
Fundraising	14
Team Fundraising Events	14
Individual Fundraisers.....	14
Communications.....	15
Team Website.....	15
Text Messaging.....	15
Outreach/Service.....	15
Behavior	16

Detailed Information.....	17
<i>FIRST</i> Robotics Competition (FRC).....	17
Build.....	17
Competition.....	17
<i>FIRST</i> LEGO League (FLL).....	18
Identity.....	18
Uniform	18
Photography and Media	19
Meetings.....	19
Safety	19
Emergencies and Injuries – Procedure	19
Rules for Work Area and Metal Shop	20
Scholarships.....	20
Sponsors	21
STIMS	21
Team Meals.....	22
Travel & Competition	22
Participation	22
Non-Regional Outreach/Service Events	23
Regional Tournaments.....	23
School Absence.....	23
Written Documents on Behalf of the Team	23
Contacts.....	24
Authority of the Handbook.....	25
Acknowledgment	25
Appendix A: Sample Team Budget	26
Appendix B: Falco Tech Letter Program.....	28
Student Contract	29
Transportation Liability Contract.....	30

Introduction

Welcome to Falco Tech!

We are excited to have you as part of *FIRST* Robotics Team 3193, a.k.a. Falco Tech, a partnership between Austintown Fitch High School, our technical Mentors, and our generous corporate sponsors such as Taylor-Winfield Technologies Inc., and Delphi Corporation. This handbook contains the key policies, Team goals, and expectations of Falco Tech and its members, along with other information you will need.

The success of Falco Tech, both in robotics and its other community activities, is due to the productivity and creativity of our student members. Your participation is essential to fulfilling our program's goals. We cannot stress enough the importance of each member's responsibility and commitment in keeping our Team running smoothly. We hope that as a member of Falco Tech, you will acquire knowledge and skills (both technical and life skills) and continue to use them into college and through your future career.

Dedicated student members of Falco Tech have ensured the continued success of the Team as we start our next season in FRC. We are proud of the accomplishments of past Teams and the foundation that they have built. We are grateful for the opportunities that Fitch High School, *FIRST*, and our sponsors give us, and we are honored to carry on that work towards a tradition of excellence. We look forward to the opportunity to continue to give back to the Austintown and *FIRST* communities in every way we can.

Mission Statement

- To spread appreciation and understanding of science, technology, engineering, and mathematics (i.e. STEM) throughout the Austintown Local School District and our community.
- To provide students the opportunities to experience “real-world engineering” and to learn technical and non-technical skills with industry professionals that the current high school curriculum does not offer.

- To promote life skills such as responsibility, teamwork, time management, and accountability in order to prepare students for their futures beyond high school.
- To encourage cooperative learning within our Team, and to use our knowledge, resources, and Gracious Professionalism help other robotics teams be successful.

Team Eligibility

To join Team 3193, a student must fill out a Team Application, which can be found on our Team website under the “Team Documents” section. Both returning and new members must submit an application. Any interested and motivated student attending either Fitch High School or the Hope Academy, or taking online classes through the Austintown School System is eligible to apply, and all freshmen will be accepted automatically. Students must submit their applications no later than September 30 to either Mr. Zimmermann’s robotics mailbox (located in the front office) or to any mentor at a regular Team meeting. Each application will be reviewed by the Leadership Team. Decisions are based on dedication to the Team, work hours, event attendance, fundraising efforts, and the written application. Accepted members must then complete the contract on the last page of this Handbook and deliver it to any Team Mentor. For further information, contact Mr. Zimmermann (see contact information).

Who Is Falco Tech?

Falco Tech is a competitive robotics team that competes under banner of *FIRST*, which stands for “For Inspiration and Recognition of Science and Technology”. *FIRST* is a nonprofit organization founded by Dean Kamen in 1989, whose mission is:

- To inspire young people to be science and technology leaders
- To engage them in exciting mentor-based programs that build science, engineering and technology skills, and inspire innovation
- To foster well-rounded life capabilities including self-confidence, communication, and leadership.

FIRST was created to inspire young peoples’ interest and participation in applied science and technology, and to lead them into STEM career fields. Members work side-by-side with professional engineers and knowledgeable mentors for “hands-on” learning, giving them real

engineering experience. We compete in the FRC division, or “*FIRST* Robotics Competition”. Known as “The Superbowl of Smarts”, teams are given the task of designing and building a 150-lb. robot capable of competing in an alliance-based game. The game, like the robot requirements, change every year.

Our Team, Falco Tech, is also known as Team 3193. This number was assigned to our Team by *FIRST* in our inaugural season. Similar to NASCAR, every team is assigned a number which is prominently displayed on the robot for easy identification. Because of this, teams in FRC are often referred to by their team number as much as their team name, so our Team will be referred to as “Team 3193” or just “3193” as much as “Falco Tech”.

Falco Tech is an all-year program, and is broken into four phases:

- Pre-season (September – December): Members will receive training in Team structure and organization to prepare them for competition. Technical training and workshops will take place in a number of areas, which may include tool and machine use, CAD usage, and programming. Community and sponsor demonstrations will also take place, as well as fundraising to cover competition expenses.
- Build Season (January – February): The Team will receive the rules for the upcoming competition season via a Kickoff Event broadcast world-wide. Members will design and build the competition robot in a time-constrained six-week timeframe.
- Competition Season (March – April): Teams will compete in several regional competitions with the hopes of qualifying for the FRC World Championship Event.
- Post-season or Off-season (May – August): The Team will have the opportunity to participate in unofficial competitions and team-building events put on by other FRC teams, as well as participate in Community and sponsor demonstrations.

Team History

Falco Tech was founded in 2009 by engineers and Fitch alumni Mike Mellott and Ric Zimmermann. Mr. Zimmermann, then President of the Austintown Board of Education, was looking for a means to bring back and expand technical education in the Austintown Schools. At the same time, Mr. Mellott, a Design Engineer and an Engineering Mentor of local FRC Team 48, Delphi E.L.I.T.E., was looking to expand *FIRST* participation in Mahoning County, focusing on his alma mater. With no financial backing or teacher support from the Austintown Schools,

Team 3193 was formed and competed in their first season with only eight student members. As the years go by and the membership grows, Falco Tech continues to compete with pride and excitement. Notable accomplishments and events include:

- 2010: Team 3193 begins competing in FRC
- 2012: Team 3193 earns its first medal (Finalists at Queen City Regional), earns its first judged award (GM Industrial Design award, Queen City Regional)
- 2014: Team 3193 awarded NASA grant to travel to NYTV Regional, earns first non-robot award (Entrepreneurship Award, NYTV Regional), first-time Captain of an Elimination Alliance (Alliance 2, Greater Pittsburgh Regional)

Leadership Team

Falco Tech is managed by a Leadership Team of experienced adult Mentors and Teachers. Veteran student members may be included in the Leadership Team, but no student-level positions exist at this time. The Leadership Team meets frequently to make team administrative decisions and to discuss the status of major projects, with all decisions made by group consensus. Every member of the Leadership Team puts in hundreds of hours of work behind the scenes to ensure that Team 3193 operates smoothly. The Leadership Team consists of:

- Ric Zimmermann Team Leader, Build Team Leader
- Mike Mellott Assistant Team Leader, Design Team Leader
- Andy Yantes Assistant Team Leader, Programming Team Leader
- Chris Berni Head Principal, Fitch HS

What We Do

Student members participate in a number of activities as sub-teams, many of which are described below. While any member is welcome to participate in any activity with no prior experience necessary, the Team Mentors reserve the right to limit the number of members in a particular sub-team to improve organization and coordination.

Design Team

Members work to design and build advanced robots to compete in the FIRST robotics competition. In the Pre-Season, members will have the opportunity to receive training on robot structures, robot design, and CAD usage (Autodesk Inventor). In the Build Season, design of the competition robot occurs during the first critical weeks. Immediately after the Kickoff Event, members begin brainstorming a strategy around the game, which will evolve into a robot design. CAD models and drawings are created to verify fit and function of all components and to assist the Build Team. Typically, Design Team members roll into the Build Team due to their knowledge of the robot layout.

Build Team

Members will be the primary manufacturers of the robot components and the final assembled robot. In the Pre-Season, members will have the opportunity to receive training in tool and machine usage, manufacturing techniques, and shop safety under the guidance of the Mentors. Once the robot design has begun, prototype part and assemblies must be created to test and verify design concepts. Once finalized, parts are produced and assembled into the competition robot. During the Competition Season, members can be assigned to work on the Pit Crew for robot maintenance and repairs.

Support Team

Members work on tasks that, while may not directly affect the robot, are still important to make Falco Tech a more complete, well-rounded team. Activities may include, but are not limited to:

- Public Relations and Marketing: working to attract new sponsors, create publicity material to distribute to sponsors or to the community at large, create awards to recognize other teams at competitions for their achievements
- Website: managing and adding material to our website, <http://falcotech3193.com>
- Finance: create and update the Team budget, generate a comprehensive business plan
- Documentation: photograph and generate video at all Team events for use in publicity material, generate articles for local newspapers and the Team website
- Graphic Design: create media for competition awards, Team apparel and merchandise, handouts, flyers, signs, etc.

Programming & Controls

Programmers develop software control software for the robot using C++. The members also oversee development of all autonomous programming. In the Pre-Season, members will have the opportunity to learn the C++ program.

Pit Crew

Members are responsible for any modifications or repair work done on the competition robot during events. At a competition, each team is provided a limited workspace or “pit” where we store tools and equipment and work on the robot. Also, the team pit is the location for teams to display information on their program as well as their robot. *FIRST* Judges will meet with the student members of our Team and ask them questions in the pit, so Pit Crew members must be able to talk with them (as well as other FRC teams), answer questions, and discuss the qualities and features of both the Team and the robot.

Drive Team

Team members are selected for positions to operate the robot at competitions. These positions include a Driver or Pilot, a Co-pilot, and a Human Player Specialist. Any member may request to be on the Drive Team by requesting a tryout from the Leadership Team, and no experience is necessary. Drive Team members will be selected by the Leadership Team, and all decisions are final. As a member of the Drive Team, the member agrees and is expected to attend all Drive Team practice sessions and strategy meetings without fail. The member is also expected to know all parts and operation of the robot in order to assist in diagnosing any problems that may occur.

Scouting & Strategy

Scouters are responsible for developing strategy at all competitions and events. Scouts evaluate the competition for strengths and weaknesses, develop match strategies for the Drive Team, and create “pick lists” to help the Team make informed alliance selection decisions.

Outreach

Our Team has a great history of working with other robotic teams and community organizations, such as volunteering at community STEM and *FIRST* events, and providing support to other FRC teams.

NEOFRA

Falco Tech is a proud member of NEOFRA, or the Northeast Ohio *FIRST* Robotics Alliance. In addition to our Team, NEOFRA consists of seven other FRC Teams in the Mahoning Valley, including:

- Team 48 – Delphi E.L.I.T.E., Warren, OH
- Team 379 – The RoboCats, Girard, OH
- Team 2010 – The Lightning Bots, Champion, OH
- Team 4601 – Circuit Birds, Canfield OH
- Team 5077 – RoboCards, Youngstown, OH
- Team 5418 – Sonic Screwdrivers, Hubbard, OH
- Team 5481 – Bristol High School

The teams work together to help each other succeed and to spread the message of *FIRST* to other schools in the area in the hopes of creating more teams. The NEOFRA teams frequently get together for community outreach and team bonding.

Member Obligations

All Team members are expected to adhere to the following:

Grades

Academics, graduation, and preparing for a future outside of Austintown Schools are just as important (if not more so) as staying active with the Team. Each member must meet the following academic criteria:

- Maintain a minimum of a **2.5 GPA** throughout the school year
- No failing grades (F's) in any classes
- No Incomplete classes (I's)

All members are required to show a copy of their report card at the end of each grade term to a designated Lead Mentor in order to verify your grades. If a member's grades do not meet the minimum criteria, then that member will not be permitted to travel with the Team, and they will be limited as to the amount of time spent working with the Team to allow them to focus on their academics. However, it is important to know that the member WILL NOT be dismissed from the Team based on their grades. A member should notify one of the Mentors as soon as they are aware of a potential negative academic issue. The Leadership Team will help any member get the necessary tutoring to improve their academic standing.

Study Tables

During the period of time between the end of the school day and the beginning of a scheduled meeting/work session (primarily during Build/Competition Seasons), Falco Tech conducts Study Tables, located in either one of the classrooms (location to be announced) or the cafeteria. This is a time specifically to do homework and to get assistance/tutelage with schoolwork from either fellow Team members or a teacher, should one be able to be present. It is strongly suggested all members take advantage of this opportunity.

Meeting Attendance

Once school begins, the Team will meet weekly every Thursday from 5pm to 7pm (day subject to change if requested by a majority of the Team). Additional meetings may take place on other days in the week for robot project work, training classes, or sub-team meetings—these will be announced as needed.

As one of the Missions of Falco Tech is to provide a real-world, “hands-on” learning experience, participation is a must, and attendance will be taken at all meetings. Members must be present to at least 50% of the weekly meetings. If a member chooses to attend a training class, they must attend and participate in at least 80% of class days. Any project work meeting or sub-team meetings are to be attended as needed depending on the group meeting schedule.

The vast majority of the “hands-on” learning will take place during the time-sensitive Build Season, which begins on the day of the FRC Kickoff Event. During Build Season, the Team will meet to design and build the robot every day Monday through Friday from 5:00pm until at least 8:00pm, as well as Saturdays (times to be announced). We will also meet during the Competition Season for Drive Team practice and to work on robot modifications when Falco Tech is not competing (days to be announced). Members must attend and participate in at least 75% of the daily work sessions. During the Build and Competition Seasons, members are required to record their own hours on a time sheet and have one of the Mentors present sign the sheet (found on the “Team Documents” page of the Team website). Members attending but not actively participating in Team activities will not receive credit for attending that day and will be asked to leave.

Falco Tech works very much like a small business with a wide array of projects to complete in different fields. Each member of the Team must be actively involved in robot and non-robot related projects and workshops. Members are expected to contribute a minimum of two hours per week towards group projects outside of Build Season. Most of the projects will fall into one of the categories described in the “What We Do” section of this document. Anyone is welcome to participate in any project with no prior experience necessary. If any member is interested in starting his/her own project, they can consult the Leadership Team.

Falco Tech operates a year-round program, so weekly meetings will continue once the Competition Season is over (days and times to be announced). Participation is required, though it is understood that families often take vacations in the summer months. Members must be

present to at least 50% of the off-season weekly meetings and work sessions, and attend off-season events.

If a member fails to attend and participate in the required number of meetings and work sessions, they will not travel with the Team to the competitions and may also be dismissed from the Team. The member and their parents/legal guardians will receive a written warning (i.e. email or text) prior to any action taken. If attendance is a problem, contact Mr. Zimmermann as soon as possible.

Mandatory Meetings

During the year, all members are required to attend the following meetings/events without exception:

- Introductory Student Meeting – September 8
- Introductory Parents Meeting – September 15
- Mahoning Valley Robotics Challenge – September 19-20
- FRC Kickoff – first Saturday in January
- *FIRST* Lego League (FLL) District Tournament – second Saturday in January
- All Team Fundraisers (see below) – to be announced
- Select Mandatory weekly meeting – to be announced
- Select training workshops – to be announced

Team Participation Fees

Due to the increasingly high cost of robot materials, Team registration, travel costs, and other fees associated with robotics (refer to Appendix A: Team Budget), donations from our corporate and community sponsors do not fully cover either the annual Team expenses or the expense of each member. As a result, we must require each member to contribute annually to fund the Team in the form of a Team Participation Fee. This season, the Fee is \$200, payable under the following schedule:

- \$100 due prior to December 22
- balance due prior to February 28 or the first Regional Event that our Team attends (whichever occurs first)

If we are fortunate enough to compete in the World Championships in April, additional fees may need to be collected to cover travel costs (again, refer to Appendix A: Team Budget).

Members can earn money to be used towards their Fees by selling items in individual fundraisers (see “Fundraising” section below), with the potential of completely paying off their Fees with no out-of-pocket expenses. For security reasons of both the member and the Team, any payment made directly to the Team must be paid with a check made payable to “Fitch Robotics/ALSD”.

Members who feel the need to opt out of participating in Individual Fundraisers may do so, but with the understanding that they are not working to support the Team as their fellow members. Because of this, the member forfeits the individual monetary support provided through the Team sponsors, and their Team Participation fee is increased to \$300, payable under the same schedule.

Fundraising

Falco Tech is not supported financially by Austintown Schools. Each and every Team member must come together to raise the capital in order for us to build a robot and compete, so participation in fundraising activities is mandatory. Members raise monetary funds in two ways:

Team Fundraising Events

Falco Tech will hold special large-scale events to raise money from the community, which may include (but are not limited to) a Pancake Breakfast, a Spaghetti Dinner, or a Car Wash. All members of the Team are required to attend and participate in these Team Fundraisers without exception. These Team Fundraisers will be listed on the Team Calendar on the Team Website in order to provide as much advanced notice to parents as possible.

Individual Fundraisers

The Team will hold several individual fundraisers, such as the sale of candy bars, pepperoni rolls, or candles, which are sold by the members and/or their parents. The members in turn get a percentage of the sales to be used towards their individual Team Fees (see “Team Fees” section above). All members of our Team are required to participate in these Fundraisers regardless of a member’s personal Team Fee balance. Certain fundraisers may require payment for the items being sold up front (if there is a financial issue, the member or their

parents may speak discreetly to one of the mentors). For security reasons of both the member and the Team, any payment made directly to the Team must be paid with a check made payable to “Fitch Robotics/ALSD”.

Communications

All Team members are required to have an active e-mail address that they check often. It is suggested that each member monitor their email at least once daily. All other messages will be communicated to members during Team meetings or, for those with cell phones, sent via text message. Upon reading any Team email or text message, it is the responsibility of each member to acknowledge and respond to the message in some manner, preferably with a return email/text that the message has been received. Continued lack of return email/text communication by a member will result in discipline from the Leadership Team.

Team Website

The Team website is located at falcotech3193.com. To create an account, click “Request New Password,” then “User Account” in the upper-left corner, and follow the instructions on-screen. Once you have received your account information, monitor the website frequently for updates. You must log in to the site to receive team-specific updates, and all activity (or lack thereof) will be tracked. For more information, email info@falcotech3193.com.

Text Messaging

For those who want to receive Team notifications via text message, please see or text Mr. Yantes to be added to the contact list (see “Contact” section for Mr. Yantes cell number).

Outreach/Service

Community service is an important part of the Mission of Falco Tech. Every member is required to participate in approved Team outreach events, such as:

- Relay for Life
- Austintown 4th of July Parade
- Awesome-town Festivals
- 7 Days of STEM with the Oh WOW! Children’s Science Center

Members will be informed of outreach opportunities throughout the year. Activities will also include external mentoring of area FLL and FRC teams, as well as robot demonstrations throughout the community. Members must attend and participate in at least 75% of the community outreach activities, and attendance will be taken at all such events.

Behavior

Falco Tech expects that all members behave maturely and professionally at all times. As students at Austintown Fitch High School, members are also required to adhere to the AFHS Student Handbook. Members whose behavior is deemed to be below the standards of the Team will be punished appropriately by a Mentor, up to dismissal from the Team. It is important that all Team members remember that they are representing Falco Tech and Austintown Fitch HS at all times, whether in person or online, and their actions must not reflect poorly upon the Team. Team members should display Gracious Professionalism at all times, treating members of our Team and other teams with kindness and respect.

Detailed Information

FIRST Robotics Competition (FRC)

The *FIRST* Robotics Competition is an advanced competition in which teams will come together to build a robot to compete against other robots in a specified game. Falco Tech works together to build one robot, with sub-groups existing for each aspect of the robot. Anyone can participate in any part of the design or build process without previous experience.

Build

FRC robots are built during an extremely short time with the bulk of robot construction happening during a six-week “Build Season”. Build Season begins with the “Kickoff Event” held in the beginning of January when the new robot challenge is released. Later that day, the whole Team will come together to discuss effective gameplay strategies. During the Build Season, the Team will meet primarily at the STEM Classroom to design and build the robot. At the end of the six-week period the robot is “bagged and tagged”, or sealed, in order to keep us from working on the robot until our first competition.

Falco Tech designs the FRC robot using Autodesk Inventor CAD (Computer Aided Design) software, creating a complete 3D model of the robot before construction. To build the robot, we utilize advanced metalworking equipment including mills, lathes, and drill presses to machine custom parts. When possible, Team 3193 can build a second robot—a competition robot and a practice robot. After the competition robot is bagged, the practice robot allows us to keep working and practicing up until the day of competition.

Robots are programmed using advanced control algorithms in C++ by the Programming and Controls Team.

Competition

Falco Tech typically competes in two regional competitions: the Pittsburgh Regional and a travel regional (locations include Cincinnati, Indiana, Tennessee, Rochester, etc.). These competitions are three-day events, typically held on a Thursday, Friday, and Saturday. If chosen to travel with the Team, student members will be excused from class on those days. If we qualify at one of the regional competitions, we will attend the *FIRST* World Championship Event in St. Louis.

FIRST LEGO League (FLL)

The *FIRST* LEGO League introduces younger students (9 – 14 years old) to real-world engineering challenges by building LEGO-based robots to complete tasks on a thematic playing surface. We currently have four FLL Teams operating out of Austintown Middle School, with Mr. Yantes serving as the overall program manager. Veteran student members are encouraged to serve as technical advisers that float between FLL teams if they choose. This will aid in balancing the experienced Team members among all teams rather than binding them with one. Falco Tech strives for overall excellence and this is the best way of ensuring that all FLL teams are equally balanced and that all have the same opportunity at success. FLL meetings take place from 6pm to 8pm during the week (see Mr. Yantes for exact days and times).

Falco Tech hosts a district-level FLL competition, which takes place on January 11. All Falco Tech Team members will volunteer in a variety of positions during the event. All volunteers 18 year of age or older must register with *FIRST* and VIMS.

Identity

Falco Tech is known throughout the *FIRST* robotics community and has a very distinct identity associated with it.

Uniform

The uniform of Falco Tech consists of either:

- Current Team T-Shirt, current ID badge, jeans, closed-toed shoes, or
- Current Team Collared or Mechanics shirt, current ID badge, khaki pants, closed-toed shoes

Team shirts and ID badges will be distributed during the school year and should be worn on all days of competition as directed. Uniforms must be worn at all off-season events and robot demonstrations as directed. Uniform wearing is recommended on the school day before and after a robotics competition in order to raise awareness at the school. Current and previous years' Team shirts are considered acceptable Falcon Wear during school hours.

Photography and Media

Falco Tech works hard to document our activities, and all members must be willing to be photographed and appear in Team-related publications.

Meetings

Full Team meetings are held at 5:00 pm every Thursday in the Robotics Room except as announced. Certain key meetings will be announced as mandatory and all Team members must attend (See “Mandatory Events” for more information). These mandatory meetings will be declared mandatory at least one week ahead of time. Other project groups may have meetings as announced. For all other meeting times, please consult the Team calendar on the Team website.

Safety

Robotics, an activity where members regularly work with sharp metal and dangerous tools, can be very hazardous. All members must listen to fellow Team members so that they may act safely. Mentors and Teachers always have the final word in any situation where safety is at stake. If any member is caught partaking in unsafe conduct or behavior that does not comply with the Austintown Fitch HS Student Handbook, there will be consequences including the possibility of dismissal from the Team.

Emergencies and Injuries – Procedure

Check – Check the scene. Is it safe? What happened? Who is injured? Is someone there who can help you?

Call – Find a Mentor. Call an emergency number. If an emergency occurs, the operator will need to know your name, location, telephone number, and description of the emergency.

Care – After contacting emergency care and Mentor(s), use the first aid tips and kit to care for the victim. Remember, the best thing you can do for someone who is severely injured is to help get an emergency care professional as fast as possible.

Report – All emergencies must be reported to Mr. Zimmermann as soon as possible for the official school report.

Rules for Work Area and Metal Shop

Members will be asked to leave the lab for unsafe behavior and may not be able to return.

1. No member is ever to work without a Mentor on site.
2. Always wear safety glasses when operating or are near somebody who is operating power equipment. Additional Personal Safety Equipment (PSE) must be worn as required by the given task. If unsure in any given situation, wear safety glasses.
3. Any member intending to use any potentially dangerous tools must be trained about how to safely use the tool by a Mentor before the member will be permitted to use that tool.
4. When finished using a tool, it must be returned to its designated location in the shop.
5. At the end of every work session, all tools and materials must be put away.
6. If a member leaves before a work session is over, they must spend AT LEAST 15 minutes cleaning (or have permission to leave from a Mentor).
7. If a power tool malfunctions or breaks, it must be reported to a Mentor immediately.
8. Electrical devices of any kind may NEVER be powered by daisy-chaining cords or power strips.
9. No loose hair or long clothing is permitted during the use of power tools.
10. Closed-toed and closed-heeled shoes are to be worn at all times—no sandals, flip-flops, or Crocs.
11. Members must be respectful to everyone (present or not)—remember your Gracious Professionalism.
12. Horseplay and games are not tolerated.
13. All members must abide by the guidelines set forth by the Falco Transportation form. If a member is unsure of their transportation status, check with Mr. Zimmermann.
14. All applicable rules of Austintown Fitch HS apply at any place where robotics work is being done.

Scholarships

FIRST offers millions of dollars in college scholarships—they vary from one-time awards up to full four-year tuitions. *FIRST* scholarships are funded and administered by the Scholarship Providers (colleges, universities, corporations, etc.), not by *FIRST*. Each scholarship has unique eligibility requirements, deadline dates, and application procedures. If a member is interested in one of these scholarship opportunities, it is up to the member to research the

availability and requirements. Go to the *FIRST* FRC website (www.usfirst.org/roboticsprograms/frc) and select “Scholarships” on the left-hand column for more information, including the complete list of available scholarships. The Leadership Team will assist when possible, including writing a letter of recommendation. Questions about specific scholarships should be directed to the contact listed in the scholarship description.

Sponsors

Falco Tech is only possible because of the generosity of our sponsors because a majority of the Team’s funding comes from Corporate Sponsorship. A local corporation or business can donate money to Falco Tech to support our activities, which is given directly to Austintown Schools, who in turn provide it to the Team as needed. Some larger corporations have funds set aside specifically for supporting local charities and educational activities. Sponsors can donate at different levels: Signature, Platinum, Gold, or Silver. Each level allows for different levels of recognition, all of which are specified on the Team website (see the “Team Documents” page).

Businesses can also donate materials and services in lieu of money. Some examples include but are not limited to: food, machining, metal, fasteners, robotic components, T-shirt and hat printing, photocopying, computers, metal finishing, plastic, banners, and software.

Acquiring Corporate Sponsors is not a requirement of individual Team members, but it will greatly benefit the Team. If a member or their parents are aware of a potential Corporate Sponsor (such as their place of employment), please contact Mr. Zimmermann.

STIMS

The *FIRST* Student Team Information Member System (STIMS) is used to register student members for participation in *FIRST* and to collect annual *FIRST* Consent and Release Forms required for participation in all *FIRST* events. Members who are authorized by the Team to submit FRC awards to be judged at competition must do so through STIMS

Parents or legal guardians of student members are asked to return to STIMS each season, login using their existing login credentials (or create a login in the case of new members) and apply to

Falco Tech on behalf of their student, as well as complete the annual *FIRST* Consent and Release Form for their student.

STIMS can be accessed at: <https://my.usfirst.org/stims/site.lasso>

Team Meals

During Build Season, the Team typically works into the evening each night to design and build the robot—often past traditional family dinner time. It has become a tradition in Falco Tech for Team parents to prepare a family-style dinner for the Team each work night. This approach to cooking Team Meals:

- Insures that the student members are getting a good evening meal
- Keeps the members from having to travel outside to get dinner
- Acts as a Team bonding experience—sitting down and having a meal together
- Allows the members take a break and get back to work quicker

Parents will be contacted at the beginning of Build Season to select an evening to volunteer.

Travel & Competition

Participation

Most competitions outside of the Mahoning Valley area require travel. The Leadership Team will determine if a member is eligible to attend these travel tournaments. Not all students may be eligible, and selections will be made based on attendance and contribution. It will be assumed that all members will be interested in attending travel tournaments—if a member cannot attend for any reason, notify Mr. Zimmermann as soon as the dates are announced and they are aware of a conflict.

Team members are responsible for their actions during competition. Always remember that an individual's behavior reflects on the Team, on our sponsors, on Austintown Fitch High School, and on himself/herself. Whether at the competition facility, at an amusement park, at a hotel, or at a restaurant, every member should remember that they are an integral part of Falco Tech, and their behavior should reflect the respect they have for themselves, for the Team, and for

others. Those who are not members of Falco Tech but are cheering for or representing the Team in any way must adhere to these guidelines as well. In other words, if a friend from school comes to a regional separately from the Team, but is representing the Team in any way (even if only sitting with the Team), make sure they represent the Team positively.

Behavior that is deemed below the standards of Falco Tech may result in punishment by an adult Team Leader. More severe infractions at a competition may result in contact of the member's parents to come and take their student home, and/or suspension or dismissal from the Team (at the discretion of the Leadership Team).

Non-Regional Outreach/Service Events

Many Team events, including FRC build sessions, will not occur at Fitch HS. Transportation may be provided to these events, often in the form of rides from parents.

Regional Tournaments

Falco Tech will arrange all transportation (typically a charter bus, school bus, or school van) and overnight lodging. All members **MUST** travel with the Team—members are not permitted to travel with their parents separately from the Team unless classes or exams require the member to travel after the Team's departure time. Furthermore, members are not permitted to stay with their parents in their hotel room, even if their parents travel with the Team as chaperones.

School Absence

Many Team events will require that members miss school. It is a member's responsibility to inform his teachers of an absence ahead of time and arrange for completion of missed assignments. The Attendance Office will be notified each day by Mr. Zimmermann of all members who are on the travel list and are permitted to miss school for that day. Any member not on the travel list is not officially with the Team that day and is not excused from school.

Written Documents on Behalf of the Team

Any written documents put into writing on behalf of the Team must be approved by the Leadership Team. Written award submissions are included and may not be submitted without the explicit approval of the Leadership Team and Mr. Mellott.

Contacts

Ric Zimmermann – Team Leader

r.zimmermann@sbcglobal.net

ricz@peachtreemetals.com

zimmermann@austintownschoools.org

C: (330) 503-3896

Mike Mellott – Mentor

mike.mellott@delphi.com

mmellott@sbcglobal.net

C: (330) 367-9100

Andy Yantes – Mentor

andy@yantes.com

C: (330) 540-6897

Falco Tech website

info@falcotech3193.com (this sends an email to all mentors)

Authority of the Handbook

The rules and policies set forth in this handbook are binding and must be followed by all Team members. The handbook may contain appendices; these documents are binding as well. The Leadership Team has the authority to modify the Handbook at any time; the Team will be notified of any modifications.

Acknowledgment

This document would not have possible without the ability to review and research the Handbooks of other FRC teams available on a variety of websites. In particular, we would like to thank Team 254 for providing their Team Handbook on their website for other teams to examine.

Appendix A: Sample Team Budget

As previously mentioned, the cost of Team operations is very expensive due to the high cost of robot materials, Team registration, travel costs, and other fees associated with robotics. In order to better define this, below is a sample yearly budget of expenditures for a typical 40-member team attending two Regional Competitions:

EXPENDITURE	COST
<i>FIRST</i> Team Registration:	
○ Kit of Parts	\$5,000
○ Fee for first Regional Competition	
Materials for robot construction (est.):	
○ Raw materials	\$5,000 - \$6,000
○ Purchased parts	
○ Necessary tools	
<i>FIRST</i> Registration fee:	
○ Additional Regional Competition	\$4,000
Printing (est.):	
○ Banners	\$700
○ Documents	
○ Team buttons	
Team Shirts and printing (est.)	\$1,500 - \$2,000
Bussing to local Regional (ex: Buckeye)	
○ School bus/van, 3 days	\$1,500
Bussing to non-local Regional (est.)	
○ Charter bus, 3 days	\$2,500
Lodging for non-local Regional (est.)	
○ 10 rooms, 2 nights	\$2,500
Total for Two-regional Season (approx.)	\$22,700 - \$24,200

If we qualify for the FRC World Championship Event, then there will be additional costs:

EXPENDITURE	COST
Registration fee:	
○ World Championship Event	\$5,000
Printing (est.):	
○ Documents	\$200
○ Team buttons	
Bussing to St. Louis (est.)	
○ Charter bus, 4-5 days	\$5,500
Lodging in St. Louis (est.)	
○ 10 rooms, 3-4 nights	\$4,500
Additional fees/expenses (est.)	
○ Site-seeing opportunities (St. Louis Arch, museums, etc.)	\$1,000 - \$2,000
○ Possible Team meals	
Total Cost to attend World Championship Event (approx.)	\$16,200 - \$17,200

This budget has been included to point out the importance of fundraising and that it is every member's responsibility to work together to make this program feasible for everyone.

Appendix B: Falco Tech Letter Program

Falco Tech has a unique opportunity to award exceptional Team members athletic/academic Letters, similar to other athletic teams.

To be considered for a Team Letter, a member must meet the following criteria:

- They must be an active member of the Team for three years, meaning the earliest one can receive a Letter is at the end of their junior year
- Throughout their service on the Team, a member must:
 - Maintain a GPA of 3.0 or higher
 - Not receive an “F” or Incomplete on their Report Card at any time
 - Attend and participate in all Team meetings, off-season events, robot projects, and outreach events
 - Actively attend 100% of official Team Competitions
 - Actively participate in all Team and individual fundraisers

Once a member has met the criteria, the Leadership Team will meet to discuss the candidate and whether or not they are worthy of a Team Letter. The Leadership Team may ask for an oral or written explanation from the candidate as to why they think they should be deemed worthy to receive a Team Letter.

If a member joins the Team as a Junior or Senior, they may attain eligibility at the end of their senior year provided they go above and beyond to meet all other criteria. Please note that it is up to the Leadership Team to define “above and beyond”.

Student Contract

Please print and sign the contract below. Include a signed transportation form as well.

By signing below I acknowledge and understand all points listed below:

- I have read the Falco Tech Handbook describing FRC Team 3193 – Falco Tech and agree to comply with the policies outlined within
- Participation in the program requires attendance at meetings and events, and I have received a tentative schedule of those meetings and events
- The equipment used during construction of the robot can cause serious harm injury if not used correctly. Members are not permitted to use any piece of equipment until they have been instructed on its safe use and are not permitted to use any piece of power equipment without adult supervision
- I will only ride a car driven by an adult mentor, a Falco Tech-approved parent, or myself to any robotics function if my parents have signed the attached liability release/consent form
- I agree and consent to allow my photographs, name, or comments to appear in media related to Falco Tech
- I understand that violation of any of the policies in this Falco Tech Handbook is punishable by the Leadership Team up to and including dismissal from the Team

Student Name

Email Address

Cell Phone Number

Student Signature Date

Parent Signature Date

Transportation Liability Contract

	YES	NO
My student has permission to operate his own motor vehicle to and from any Falco Tech Team activity inside Mahoning/Trumbull County		
My student may transport other students (or a single student if under the age of 17) to and/or from any Falco Tech Team activity inside Mahoning/Trumbull County		
My student may travel in a vehicle operated by a Falco Tech parent or guardian to and/or from any Falco Tech Team activity		
My student may travel in a vehicle operated by another Falco Tech student to and/or from any Falco Tech Team activity inside Mahoning/Trumbull County		
My student may ride in a privately-owned vehicle operated by an adult to and/or from any Falco Tech Team activity		
I, as a Falco Tech parent/guardian, am willing to drive my student and other students to a Falco Tech Team activity when my student or other students are participating in that activity		

Student Name

Student Signature Date

Parent Name

Parent Signature Date