TEAM HANDBOOK

v1.7 - Updated 2/2/2021

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INTRODUCTION

Acronyms:

FIRST: For Inspiration and Recognition of Science and Technology

FRC: FIRST Robotics Competition

DARC SIDE: Durham Academy Robotics Club: Students In Design and Engineering

Quick Team Facts:

FRC Team Number: 6502

Founded in 2016 at Durham Academy

Hour Requirements:

- Fall: DARC SIDE will meet every Day 3 at lunch
- Spring:
  - First Week of January: Kick-off party to reveal the competition
  - Build season lasts 6-8 weeks.
  - Build sessions will run during the week during lunch, tutorial, after school and on weekends.

Important Phone Numbers:

Mr. Beck's Office Phone Number: 919.287.1718 (Dial 1 for cell)

Mrs. Starling's Office Phone Number: 919.287.1678

Team Address for Donations/Checks/Fanmail:

FRC Team 6502

℅ Mr. Forrest Beck

Durham Academy

3601 Ridge Road

Durham, NC 27705

1.1
INTRODUCTION TO THE FIRST ROBOTICS COMPETITION

FIRST stands for For Inspiration and Recognition of Science and Technology. It was created in 1989 by inventor Dean Kamen as a way to inspire passion for science and technology in students. Along with promoting Science, Technology, Engineering, and Mathematics (STEM), FIRST also promotes the ideas of Gracious Professionalism, CoOpertition, and good sportsmanship among teams even in the heat of fierce competition. Over time, FIRST has grown to support competitions across four divisions: Jr. FIRST Lego League (Jr. FLL), FIRST Lego League (FLL), FIRST Tech Challenge (FTC), and FIRST Robotics Competition (FRC).

FRC is a sport for high school aged students and involves collaboratively building a ~120 pound competitive robot. Beginning in January, FRC students and mentors work together to design, build, and compete with this robot in the yearly challenge presented to them. Beyond building a robot, students learn to spread their passion for science and technology in the community, raise funds to support our efforts, manage a budget, work as a team, and much more. FRC helps students to find their passions and exposes them to a variety of interests: computer science, engineering, physics, mathematics, graphics, video editing, artistry, business, communications, and a lot more!

Please visit http://firstinspires.org and http://www.firstnorthcarolina.org for more info.

1.2
ABOUT THE DARC SIDE - TEAM HISTORY

In the fall of 2016, Durham Academy launched a rookie team to participate in the FIRST Robotics Competition (FRC): the Durham Academy Robotics Club: Students in Design and Engineering (DARC SIDE). From our small beginnings, FRC team #6502 has gone on to attend the Houston World Championships in two of our three years as a team and have received many prestigious awards, including a Judges' Award at the World Championship for our inclusivity efforts: partnering with The Hill Center, a school for students with diagnosed learning differences and attention difficulties to make FIRST more accessible.

The values of FRC—gracious professionalism, coopertition (cooperation and competition), and good sportsmanship—align directly with our school's values for helping each student achieve personal growth in an atmosphere that is both supportive and challenging. This team has given many students the opportunity to build valuable skills for a future STEM career, as well as learn to be leaders.

For more information, please check out https://6502.team/about.

1.3
TEAM AWARDS AND ACCOLADES

Please see our Trophy Case located on the second floor of the Durham Academy STEM Building. Additionally, you can check out our banners and plaques in the Fabrication Lab.

A complete award list can be found at https://www.thebluealliance.com/team/6502/history.

1.4
ONLINE PRESENCE

Website: https://6502.team
Email: robotics@da.org
Twitter: @frc6502
Instagram: @frc6502
YouTube: FRC6502

2
TEAM STRUCTURE

Like most FRC Teams, the DARC SIDE is comprised of members, both adults and students. The DARC SIDE prides itself on being a student led FRC team with the students making as many of the important decisions for the team as they can. The mentors on the team provide guidance and help set the team's goals and direction.

2.1
MENTORS

The adults on the team are known as mentors. Much like the students, the mentors on the team come from all over and have a diversified set of skills, backgrounds, and talents. They are teachers, parents, scientists, engineers, and, above all, gracious professionals. They volunteer their time with the team to give something back to the world and help inspire and challenge students.

> *FRC Mentors play a vital role in the success of their students. Mentors work extensively with team members during the build season, designing, building, and fabricating a functional robot for Competition. Their expertise is the catalyst for the team's and students' success.*
>
> *FRC Mentors are the major distinction between the FRC program and other robotic competitions as they are wholly the professional role model for the student. Mentors engage and inspire students in ways far beyond science and technology. They enable both students and adults to appreciate the value of sportsmanship, teamwork, and Gracious Professionalism.* (firstinspires.org)

The mentors on the team are responsible for the safety and wellbeing of the students. Some of the mentors have an additional capacity as employees of Durham Academy and are responsible for opening and closing the lab. As part of this process, mentors have routine background checks performed. All mentors are expected to act with the best interests of the students and the team.

A note about freshman college mentors: Team 6502 has a strict policy that all graduating seniors must take a year off before coming back as a mentor on Team 6502. Exceptions are made for students from other FRC Teams on a case by case basis after being discussed by the current mentors on the team.

2.2
STUDENTS

Students are the core of our team. Students have access to mentors and equipment that can help them learn applicable engineering skills. Through hands-on experience, students learn how to use tools, apply scientific and mathematical concepts, design the robot, prototype, work with circuits, design strategies for competition, code the robot, troubleshoot the robot, and acquire many other engineering skills.

Students also develop skills necessary for lifelong success, no matter which career path the student's choose to follow. These include, but are not limited to, improved communication skills, time management, organization skills, and collaboration. As members of this team, students must communicate with diverse audiences and develop sportsmanship skills during competition.

2.3
STUDENT LEADERSHIP

Team 6502 leadership students are critical to the success of the team. They work tirelessly behind the scenes to organize events, apply for grants, perform community outreach, act as ambassadors for the team, train new students, assist the mentors, and a whole lot more. There is a section later in this document describing more about becoming a student leader on the team and the expectations of student leaders.

2.4
SUBTEAMS

Like most FRC teams, Team 6502 consists of different subteams that each work on specialized areas of the team or robot. Membership to a particular subteam is not exclusive and students may participate in multiple sub teams throughout the year. It is advised that new students select one area to focus on. Each subteam typically has a leadership student and/or mentor to lead, organize, and run things. No prior experience is required to join any of the subteams, but if there is an area you have experience in, then let the leadership students or mentors know about it. Often times, members help other subteams along with the one they specialize in, so many of our students are interdisciplinary.

- **Mechanical** This team is responsible for the mechanical portions of the robot, but is definitely not limited to just building the robot. Typical tasks include brainstorming, researching, prototyping, maintaining the lab, fabricating parts, and building game pieces and furniture. The mechanical team is very much a catchall subteam in that many tasks will fall to the students on this subteam even though they are not strictly mechanical tasks.
- **Electrical/Pneumatic/Special Ops** This team is responsible for collaborating closely with both the Mechanical Team and Programming teams to implement any additional design features needing specialized areas of expertise. For example, vision, pneumatics, or any other specialized focus.
- **Programming** The programming team is responsible for creating the software that runs the robot. They create drive code that the drivers interface with and autonomous functions that drive the robot without human control. They program the vision systems that enable those capabilities. They also provide input for sensors and electronics that will go on the robot. We currently use LabVIEW, Java, and/or C/C++ to program the robot.
- **Strategy** This team is responsible for analyzing game rules and possible strategies, keeping up with the evolution of those strategies throughout the season, and tracking the performance of teams at the competitions that we attend. Skills involved: statistical analysis, careful and insightful observation, spreadsheet manipulation, and creativity.
- **Marketing/Finance/Communication** Students who are a part of the marketing subteam will help craft the team's image and help the team to raise the necessary funds to register for competitions and buy parts for the robot. A significant portion of this is done outside of build season. Members of this team will write grants, encourage donations, develop relationships with existing and new sponsors, develop better communication skills, and write thank you notes! Our communication subteam is responsible for promoting our team in news stories as well as on social media. The members of this group are provided with access to the team accounts and are

expected to use them with the best interests of the team in mind when uploading content. All team documents and communications are expected to follow the DARC SIDE branding standards, which are available on the Team Drive.

- **Outreach** The outreach subteam helps develop relationships within the Durham community and beyond. As a part of the outreach team, you will help find outreach opportunities in the area, attend outreach events, and represent the team to the community. We get the opportunity to do lots of cool things with STEM, so we attend various community events to show others the cool things that FRC has to offer.
- **Others** Sometimes subteams are created from groups of students with a shared interest in a particular aspect of the robot or team. In the past, we've had subteams for circuit design, bumper material research, and team accommodations. Active participants in the team are the ones given these special roles when they come up.

Some subteams will meet outside of the normal lab hours as organized by the students and mentors leading those subteams. It is highly suggested that students participating in the programming group take time to work on tasks and self paced learning outside of the regularly scheduled meetings. Leaders of each team will meet regularly.

2.5 COMPETITION DRIVE TEAM

The drive team is responsible for driving and transporting the robot at the competition. The drive team is limited to the number of drivers outlined in the game rules. Drive team members must be dedicated to the team because it is critical that they understand how the robot works and how to communicate with the rest of the team. They also need to have the social graces to interact with other drive teams in sometimes stressful situations.

The drive team is on the field and is seen by the audience and other teams, so they should be presentable and represent the team well. This means that the drive team must wear their team uniforms at all times at competition. Drive team choices are evaluated on a yearly basis, and the choices are made based on many different factors. The team will work together to decide on the drive team.

2.6
COMPETITION PIT CREW

The pit crew at the competition is responsible for ensuring the proper operation of the robot and performing maintenance between matches. This might include repairing damage to the robot, replacing components, or judiciously applying zipties. Pit Crew team members must be dedicated to the team because it is critical that they understand how the robot works and how to communicate with the rest of the team. In addition, members of the Pit Crew have responsibilities to interact with judges, VIPs, and members of the public to explain the operation of the robot and competition so knowing the rules, the team structure, and the robot (inside and out) is critical. Pit crew members must be highly effective at communication.

Space in the pit is limited at competitions and only the students designated as pit crew members or the drive team should be in the pit for prolonged periods of time. Mentors are typically in the pit at competitions to provide assistance and guidance. Much like the drive team, the pit crew choices are evaluated on a yearly basis, and the choices are made based on many different factors. The team will work together to decide on the pit crew.

3
SEASON OVERVIEW

This section describes the general timeline of the year for our team. The year begins with the preseason which will lead up to the kickoff event at the beginning of January. Kickoff marks the start of the build season which is a nonstop sprint into competitions followed by any plans we have for the postseason.

3.1
PRESEASON

- Timeframe: September to December
- Meetings @ lunch

The purposes of the preseason is for everyone to learn more about FRC, practice engineering skills, develop strong team relationships, and begin planning for the Build Season. If you are unable to attend preseason meetings, it might still be possible for you to participate on the team, but you need to notify us that you will be missing meetings and develop a plan to make up missed hours.

The preseason kicks off with a club interest meeting, where current leadership students and mentors present at the club fair or an assembly.

During the preseason we may attend offseason competitions, where we observe and/or compete using the game and robots from the previous year's competition. New students get to experience being a part of the DARC SIDE at an FRC competition, though it isn't quite the same.

3.2
KICKOFF

Kickoff is typically held on the first weekend in January. At Kickoff we receive the year's game, and over the next six weeks, subteams will select an effective strategy, design a robot to implement our strategy, iterate through robot assembly, and write code. There is a live stream video that goes along with the Kickoff that we watch as a team. It is highly recommended that team members watch the Kickoff event with the team and participate in the discussion afterwards.

We typically host a regional kickoff event for teams in the Triangle area. Though it may be exciting, the same behavior expectations at any other team event are in place.

3.3
BUILD SEASON

- Timeframe: January to February
- A typical schedule for build season is as follows. If these times change, they will be sent out in the regular team email:
    - M-F during tutorial, lunch and afterschool
    - 6 hours on the weekend (Saturday or Sunday)
- There will be a regular meeting for sub-team leaders every Monday at lunch.

Build season begins with the Kickoff on a Saturday morning in early January and continues until our first competition date. We set a soft-bag day to 6 weeks after kickoff at which the robot is handed off to programmers and drivers for testing and practice.

3.4
COMPETITIONS

- Timeframe: March/April
- Meetings typically follow the same schedule as build season

Competition season refers to the time period between our first and last official competition. We compete in the FNC district, which consists of all North Carolina FRC teams. During the weeks following build season, we will compete at two district events. If we are successful at these events, we continue on to the district championship event, where we compete for the chance to attend the FIRST Championship in late April.

3.5
POSTSEASON

After the end of our competitions we typically take a few weeks off and then we resume meeting once or twice a week to discuss plans, rebuild robots, clean up the lab, and train new leadership students. We might also make plans for workshops or meetings over the summer.

4
MEMBER AND TEAM EXPECTATIONS

This section is about the requirements and expectations for being a team member on the DARC SIDE. These requirements are not meant to be scary or intimidating, but they are meant to be taken seriously. We ask that all team members put a similar amount of energy into this program so that they get the full experience of being on a great FRC team.

4.1
HOUR AND MEETING REQUIREMENTS

While we have no minimum hour requirements, contribution hours both in the lab and out of the lab will be tracked. Along with other factors, time contributed will be used to determine travel team. In the lab, members will be able to sign in and out with their DA ID card (similar to a print release station) and hours will be automatically tracked. If you leave the lab for more than a few minutes, you are expected to sign out. If you forget to sign out, your hours will be discarded. Certain subteams also have the opportunity for contribution from home, so any hours contributed out of the lab can be reported to the respective subteam lead to be recorded. Dishonesty regarding out-of-lab contributions will lead to serious consequences. We remind team members that what they get out of DARC SIDE will match what they put into it.

- Fall: FRC Club will meet during lunch on Day 3 starting in November
- Spring:
    - First Saturday of January: Kick-off to reveal the competition (in Kenan)
    - Build season lasts ~8 weeks
    - Build sessions will run during the week after school Mon-Thurs and on Saturdays. Hours may be expanded if necessary to complete the robot on time.

4.2
INCLEMENT WEATHER

Our build season coincides with the winter weather season in North Carolina so on occasion we have to close the lab because of adverse weather conditions. When this happens, a message on MS Teams will be sent out to notify team members of the closure. All members should use good judgement when traveling to or from the lab in these conditions. Parents should also use good judgement in deciding if a student should travel to the lab, either with them or on their own.

4.3
MISSING MEETINGS

If you know that you will be missing a meeting or missing your hours because of school, family, or prior obligations you must notify Mr Beck and Ms Starling before you miss the hours.

If you have extenuating circumstances that cause you to unexpectedly miss hours, still send an email as soon as possible.

It is your responsibility to notify the team that you are missing your hours for the week.

4.4
DIFFICULTIES MEETING REQUIREMENTS

It is each student's responsibility to ensure they are meeting their hour requirements. Please remember that there is no prize for having the most number of hours;it would be better to be there for less time and be highly dedicated than to come all the time and sit around with your hands in your pockets.

If a student needs help getting transportation to meetings, they can reach out to the leadership team and mentors through MS Teams, who may be able to help arrange a carpool. In the unlikely event transportation cannot be found, special measures may be applied (leniency with hour requirements, assignment of work outside the lab, etc.) to ensure the student can still participate.

If a student is unable to meet financial requirements of the team, they may inform the Mr. Beck (forrest.beck@da.org). We will not allow for finances to bar any student from fully participating on the DARC SIDE.

4.5
SIGNING IN AND OUT

We track the time team members spend in the lab through a sign in/sign out system that we will be developing.

In the future a system will be developed to allow members to see their hours. Members are responsible for keeping up with their own hours to ensure they are meeting the team's requirements. A member might be notified by a student leader or mentor if they are not meeting the requirements. This is a courtesy to members and they should not rely on it.

4.6
ACTIVE PARTICIPATION

Active participation is a requirement for all team members of the DARC SIDE. Active participation includes sharing information and ideas, listening to others,helping out with tasks in the lab and participating in fundraising/outreach events. Members who are active participants in the team are more likely to be assigned tasks they are interested in and are more likely to end up in the drive team, the pit crew, or leadership positions on the team.

4.7
TEAM COMMUNICATION AND SURVEYS

Team members are expected to keep up on team communication. The primary means of communication for the DARC SIDE will be through MS Teams, with some email groups. The emails are typically sent once per week, but sometimes more frequently. Team members are expected to check MS Teams and email regularly and follow communication on their personal email account.

MS Teams: MS Teams is not your social media site; it is used for productivity towards team goals only. MS Teams is used for the following:

- General team announcements and reminders
- Subteam announcements and reminders
- Quickly sharing links to relative documents or design ideas
- Brainstorming design ideas are allowed
- During competitions, we will update meeting times and scouting discussions on MS Teams

Refer to the attached document for how to install MS Teams on your computer and phone. Remember to turn on notifications. We use MS Teams for almost all communications as a team. **It is imperative you have MS Teams and pay attention to all announcements.**

No final design decisions are made on MS Teams. The team must decide in person on design decisions.

Google Team Drive: We will share the team drive with you. Team Drive is used for the following:

- Organizing the rules manual and general team schedules
- Each subteam has a folder to organize relevant documents and informational handouts
- Tracking materials
- Documenting the team's design process

Each document you place in the team drive should directly pertain to the team and team goals.

4.8
STUDENT FINANCIAL OBLIGATIONS

While there are no fees or dues for being a team member of the DARC SIDE, there are some financial obligations for students going on team trips. The team heavily subsidizes travel to events by paying for a significant portion of the hotel and travel costs, but the expense is too large for the team to cover completely.

We may ask that members provide some additional funds per trip to help cover travel expenses. We will inform members in advance of what the costs will be. We can provide financial assistance to any student that requires it;they just need to let the mentors know of their situation by speaking to them or emailing forrest.beck@da.org.

There are also some fees associated with purchasing a team uniform. Again, financial assistance can be provided to help cover these costs if it is needed.

Please be sure to pay fees by the due date listed in the team communications. Any fee that is not paid on time will result in not receiving the item or not being allowed to go on the trip. Some of the fees are nonrefundable. Even if you have paid for a trip, you must be a team member in good standing and meet all team requirements to attend a trip.

4.9
GRADES

While team commitment is highly valued, students cannot be on the team and neglect their school performance. As such, should the team receive notification from school personnel (teachers, advisors, counselors, etc.) or parents regarding declining academic performance, the mentors are obligated to bar such students from the lab or place a cap on the student's weekly hours until such time that the student's academic standing is no longer in jeopardy.

This is not meant as a punishment, but as an aid in enabling students to address their priorities and let their grades recover. In addition to impacting lab time, declining academic performance can also impact a student's ability to attend a competition with the team or go on trips.

4.10
TEAM TRIPS

This section is about the expectations for students attending events and going on trips as members of the team. Mr. Beck and Ms. Starling will choose travel teams.

There is typically a significant amount of paperwork associated with going on a trip with the team. If you are asked to fill out a form, please do so accurately and quickly. Even once you turn in the paperwork, there is additional work that the mentors must do to enable students to go on trips.

While on trips, team members are expected to act responsibly and courteously. They are representatives of the team and must act accordingly. For overnight trips, members are expected to be ready to depart at the time stated. Team members are also expected to follow all rules and regulations per Durham Academy's policies for school trips.

4.11
PRIVILEGES AND CONSEQUENCES

There are a large amount of resources put into this team;from the time the mentors donate to the team, to the money that parents, schools, and companies donate. These resources provide the team's members with an opportunity to do something great by exploring frontiers which would not normally be open to high school students. There are privileges to being a team member:

- Going on team trips
- Being in team pictures
- Wearing a team uniform
- Participating in team activities
- Riding team transportation
- Accepting awards
- Receiving excused absence
- Receiving team food
- Receiving college recommendations

If you are unable to follow the rules of the team or make the minimum requirements then there are consequences. You might not be able to take part in the above privileges. Severe infractions may result in a team member being asked to leave the lab or leave an event. Please refer to the Durham Academy Student handbook for expected student conduct.

4.12
UNIFORMS

All team members are required to wear a uniform during all competitions and outreach events. This typically only entails a coral or gray DARC SIDE shirt. The team will also sometimes sell other merchandise like hoodies, which are also acceptable during team events.

5
SAFETY AND LAB PROCEDURES

The DARC SIDE takes safety seriously. We want to ensure that everyone goes home with their fingers intact when the lab closes for the day. There is a lot of trust placed into the hands of students to use tools with caution and respect. It is expected that all team members will follow safety protocols and when in doubt, they will ask for help or assistance.

5.1
DARC SIDE SAFETY PHILOSOPHY

Team 6502 practices practical industrial safety and expects all team members to be able to recognize the risks associated with using tools, fabrication equipment, and the robot itself. Team members are also expected to recognize methods by which those risks could be reduced. Members of the team are expected to stop whatever task they are doing if a mentor or fellow team member points out that they are not using safe operating procedures.

5.2
PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) includes items such as safety glasses, hearing protection, hair ties, closed toed shoes, breathing masks, and more. It is expected that all team members will use PPE as it is needed to perform the work they are doing. There are some guidelines on when different equipment should be used in the Lab Procedures section.

Some of the PPE items are communal and available in the lab for team members to borrow as they need them, while others may need to be supplied by team members (we don't keep hair ties for instance). Depending on the demand, a group purchase for safety glasses may happen at the beginning of the year. If this does happen, then it will be communicated to team members and they may elect to purchase a pair of safety glasses for themselves.

5.3
SAFETY TRAINING

New team members will be trained on how to properly use the equipment in the lab before they will be allowed to use it on their own. For some tools and equipment, such as basic hand tools, training consists of a mentor or existing team member demonstrating proper use and then watching as the new team member performs the same exercise.

With more dangerous tools (saws, mills, lathes, etc) there will be a period of training that a mentor must be present for. Even after completing the training, a mentor must be present at all times when those tools are in use. These tools can be lethal if used incorrectly, and they must be treated with respect.

5.4
LAB PROCEDURES

There are many procedures to follow while in the robotics team's lab at DA. Some of these procedures are simple, such as wearing closed toed shoes. Other procedures are more complicated, such as changing out a collet on the mill. The purpose of this section is not to document all of the procedures we have in place, but rather to provide the general procedures that should be followed while in the lab.

- Closed toed shoes are required in the lab area at all times.
- Wear eye protection at all times while tools are being used in the lab.
- Notify an adult immediately of any injuries that occur in the lab.
- Pull back shoulder length or longer hair before using equipment.
- Roll up long sleeves and tuck in loose clothing before using equipment.
- Notify the adult in the lab before using equipment.
- Examine tools to make sure they are in proper working order before using them.
- Wear hearing or breathing protection when necessary.
- Use good judgement when traveling to and from the lab. (e.g., Inclement weather, wearing a helmet and high visibility clothing when riding a bike, signing out, etc.)
- Caution others that they are using equipment improperly if you see them doing so.
- Know the locations of the nearest eye wash station, first aid kit, and fire extinguisher.
- All DARC SIDE members are expected to question anything that does not feel safe or reasonable.
- Understand what the robot signal light is telling you (see section 5.7).

5.5
LAB CLEANLINESS

It is the responsibility of all team members to keep the lab clean. Cleaning the lab is not a glamorous job, but it is necessary to keep the team functioning. Parts of the lab are shared with classes at DA and we are allowed to inhabit the space as a courtesy to the team. Therefore, it is our job to ensure that the space stays clean. All team members are responsible for putting away tools, cleaning up scraps, tidying workspaces, organizing equipment, and other tasks as necessary. If you are assigned a task that involves cleaning up the lab, then please accomplish that task with minimum fuss. Because the lab is a shared space, anything left in the lab that is not put away can be used/taken by others.

5.6
LAB VISITORS

We love showing off our lab and what we are working on to guests and visitors. However, we like to have some notice before they show up, just in case we are working on something dangerous. If you want to bring someone by the lab, then let one of the mentors know about it first. Letting them know first enables them to act as gracious hosts for any visitors. Visitors are not to operate the robot or shop equipment.

5.7
ROBOT SIGNAL LIGHT

The Robot Signal Light (RSL) is probably the **most important** piece of information regarding safety procedures. **Please read this section carefully and understand it**. These robots are powerful machines. They might seem like toys or elaborate remote control cars, but a single one of our motors can produce in excess of 300 Watts of power and we often use six or more of them on a single robot. They can move quicker than you can and apply forces strong enough to break steel and aluminum. It is important that you understand how to identify if an FRC robot is enabled. All FRC Robots MUST have a safety light. The light is orange and should be mounted in a highly visible location on the robot. As of 2015, the light will be solidly lit when the robot is powered on and disabled. The light will blink when the robot is enabled.

All team members are expected to understand that if the robot signal light is blinking, then the robot is enabled and they should maintain a safe distance.

6
TEAM EXPENDITURES AND FUNDRAISING

Running an FRC Team is expensive. The DARC SIDE spends more that $25,000 yearly to attend events and build robots. That $25,000+ comes from generous sponsors and does not include the money that students are expected to contribute for attending events, so the actual yearly cost for this endeavor is higher.

6.1
MEMBER FUNDRAISING EXPECTATIONS

All team members are expected to do what they can to help with fundraising. This includes writing letters, sending emails, putting up flyers, talking to sponsors, giving presentations, and a whole lot more. Team members will be asked throughout the year to help with fundraising activities for the team and should embrace those activities and not shirk them off. If we do not have the funds to attend an event then we will not be able to compete.

6.2
WHERE TO SEND DONATIONS

Checks can be made out to Durham Academy with "FRC Robotics" on the memo line. Checks can be mailed to the following address or given to mentors:

FRC Team 6502
% Mr. Forrest Beck
Durham Academy
3601 Ridge Road
Durham, NC 27705

6.3
CORPORATE SPONSORS

We love our corporate sponsors and what they do for us. From providing funds to donations in kind, they make our possibilities into realities. We put their logos on our team uniforms, on our website, and on the robot. **If you have a contact at a potential corporate sponsor, then let us know about it.** Our corporate sponsorships are divided into levels based on the level of the donation we are receiving.

- Platinum $5000 or more
- Gold $1000 to $4999
- Silver $500 to $999
- Bronze $1 - $499

7
STUDENT LEADERSHIP

Being a student leader on the DARC SIDE is about more than having the alacrity to attend the regular leadership meetings. It is about demonstrating a higher level of commitment, understanding, and communication. It is about being selfless by placing the team's needs and the greater good of the team above your own. It is about interfacing with mentors, administrators, and other adults in a professional setting to solve challenging and complex problems. Above all, it is about learning the skills necessary to be a leader in the world today.

7.1
EXPECTATIONS

Student leaders are expected to be self starters and to perform their assignments without being constantly reminded. They are expected to perform assignments they might not necessarily want to perform, but are necessary for the betterment of the team. They are expected to take on challenges and overcome them. They are expected to act with decorum in the tense situations that can arise between team members. Diffusing tense situations and helping team members to see each other's point of view is just part of the job for a leadership student.

Student leaders are expected to respectfully and prudently question any decision made by a team member that they feel is not in the best interest of the team. To be clear, mentors are team members too. In the event of a student leader questioning a decision by a mentor, the mentor should make a point of explaining why a decision is being made. Student leaders are learning how to become decision makers and they cannot do that effectively without explanation. Additionally, team members are expected to question student leaders if they think decisions or actions are being made that are not in the best interest of the team. This should yield an open discussion and explanation.

7.2
COMMITMENT

Student leaders are expected to be committed completely to the team. This commitment starts in the preseason, if not before with student leaders developing plans and curriculum for the team to use in the preseason. Leadership students must be present at preseason meetings to actively teach new members and develop their authority on the team. Leadership students should attend all of the preseason meetings. Leadership students are responsible for communicating to the other leadership students and mentors when they will be missing a preseason meeting.

7.3
LEADERSHIP MEETINGS

The leadership students make a point of meeting regularly. These meetings are typically held once per week during the course of the year. These meetings represent an opportunity for the leadership students to talk with one another and with the mentors about anything and everything.

Leadership meetings during build season will be open to all students who are considering becoming a leadership student as well. If you have been coming regularly and are planning on missing one, then you should send a message on MS Teams to let everyone know.

7.4
COMMUNICATION

Learning to effectively communicate is the largest part of being a team member. It is important to develop ways to communicate effectively with other leadership students, mentors, other team members, parents, and sponsors. Effective communication is not just about communicating one's own ideas to others, but also about how others communicate with you. It is important to listen and understand when others are communicating and to always show a willingness to accept input from any member of the team. Leadership students are expected to avoid being dictatorial or commanding, but rather they must be willing to compromise, change, and understand others' viewpoints.

Any team member can get in touch with the current leadership students on the team through MS Teams.

7.5
HOUR REQUIREMENTS

Student leaders are expected to put in additional hours of work per week into the team. Not all of this time is spent in the lab and not all of it is tracked. Sometimes the work is assigned by mentors on the team and other times it is self-created work because a student leader wants to work on building up the team in their own way. *This time is not limited to the build season and includes the preseason and postseason as well.*

While not all of these hours are tracked, they are demonstrated through the work that these students perform. If at any point during the year, a student serving as a leader is not thought to be fulfilling this requirement then they will be talked to by the mentors and other leadership students and a plan for that student's continued involvement with the team will be worked out.

7.6
TRAINING NEW MEMBERS

Training new students and planning the preseason activities is a large portion of being a leadership student. It is important for student leaders to plan the curriculum for the preseason meetings. The leadership students responsible the subteams should plan meetings and collaborate with other leadership students in those areas. It is important to remember the basic goals for the preseason meetings:

- Teach as many skills as possible necessary for build season
- Give students an understanding of what it means to be a member of the DARC SIDE
- Turn new team members into dedicated DARC SIDE members

7.7
PROSPECTIVE STUDENT LEADERSHIP

The requirements to be a leadership student are simple but open ended. The primary requirement is at least one year of service to the team as a student demonstrating the ability to meet all requirements of the team for that year. In addition, leadership students are expected to be self starters that have a desire to go above and beyond the minimum requirements. Good communication skills, particularly when working with other students and mentors, are also a requirement. Prospective leadership students are also expected to have attended at least 75% of the build season leadership meetings.

A short essay must be submitted to the mentors outlining why a student would like to be a student leader on the team. The purpose of this essay is to help the mentors identify those students who want the additional responsibility that comes with being a student leader. Returning leadership students are also required to submit this short essay.

While there are an unlimited number of leadership opportunities on the team, the lead mentors have the final say on if a student is to be considered a part of the team's leadership or not. Existing leadership students are encouraged to provide feedback to the mentors on which students they feel should be considered for leadership and they should also encourage those students to step up into a leadership role on the team. The thoughts and opinions of the existing leadership students are pivotal in the assessment of future leadership students by the mentors. The selection process is not one sided and the best interests of the team should be placed above all else in determining student leaders.

7.8
CONSEQUENCES

If a student leader is not meeting those responsibilities and expectations, then there are consequences. To start with, there will be some side conversations with the mentors to ensure that the student leader in question understands what is expected of them. After that, the student leader might be asked to step aside and into a lesser membership role on the team. In the worst cases, the consequences could involve a student leader being asked to leave the team entirely. This outcome is obviously not desirable for anyone involved.

7.9
UPDATING AND MAINTAINING THE HANDBOOK

The student leadership and lead mentors are expected to help maintain the team handbook and make changes to it as the team continues to evolve over time. Any changes are to be brought up and discussed with student leaders and mentors at the regular leadership meetings.

While the document is formal, the process for updating the document is not. Minor changes can be made without notification, but major changes will be communicated to the team. Minor changes include fixing spelling and grammar errors, while major changes would involve changes to the team membership requirements or other content.

8
PARENTS

Parent support is essential to the success of our team. In addition to the items listed below, parent encouragement and mentorship will help our students have a positive experience. By modeling the core values of our team- cooperation, communication, collaboration, creativity, and determination- parents can encourage students to develop and implement their own ideas. We welcome discussions between mentors, parents, and students, and we aim to implement student-driven ideas in the design and competition process. If you are interested in becoming involved through mentorship or if you have any questions, please email robotics@da.org.

8.1
WAYS TO HELP

- **FIRST Registration**: Parents will need to complete registration and consent forms with FIRST Inspires and NC FIRST. These forms must be complete before their student can attend any FIRST events (including the kickoff). Both forms are available online at the links below:
    a. FIRST Inspires: https://www.firstinspires.org
    b. NC FIRST: To be determined for 2020
- **Transportation to competitions**: Depending on where our competitions are, we may need help transporting our team and our robot. Competition locations change each year, and as we determine our transportation needs, we will be in contact with parents. Additionally, we will need a trailer to help transport our robot and tools. Parents or friends can donate the use of a trailer for the weekend competitions.
- **Snacks**: Parents can provide snacks and drinks on build weekends and during competitions. We will start a sign-up sheet and email parents once build season starts.

If there are other ways you would like to become involved with our team, please contact one of the mentors.

9
TEAM CULTURE

The DARC SIDE has a unique culture as an FRC team which varies from year to year. Please refrain from comparing our team's culture to other FRC teams or DARC SIDE in past years.

9.1
COMMUNICATION

Effective communication is at the heart of what the DARC SIDE is all about. Engineering projects don't fail because of bad engineering, but they can fail because of bad communication. All team members should strive to improve their communication skills as members of the team. This means actively participating, listening, and treating all ideas with respect even though you might not agree with them.

9.2
MAKING IT FUN

The experience that the DARC SIDE provides is meant to be fun for all team members. That does not mean that every task assigned to a member is going to be as much fun as riding a rollercoaster. It means that the experience of being on the team is meant to be fun for all team members. There is still hard work that has to be done and there is the occasional task that no one wants to do that needs to get done, but overall, the experience is meant to be positive and provide enjoyment for those involved.

9.3
STUDENT RESPONSIBILITY

While the mentors are expected to act as responsible adults, they are not the primary decision makers for the team. The students are responsible for making decisions for the team with the mentors providing guidance, feedback, and, only if necessary, acting as tie breakers. Decisions are made by those students attending meetings where decisions are made and are typically done via a hand count voting method. Key decisions for the team include which competitions the team is attending, decisions about strategy, and design decisions for the robot.

9.4
EXPECTED BEHAVIOR

All members are expected to obey the rules of behavior set by Durham Academy in the Student Handbook. This applies to when you are in the lab and at events. Some behaviors worth noting include:

- Team members are expected to treat each other with respect. This includes having an understanding that everyone has different backgrounds, beliefs, and personalities.
- Treat others as you would like to be treated.
- There is to be no name calling, mocking, or making fun of other members.
- All team members are expected to have a positive attitude.
- Be kind to others.
- Students will respect and obey the mentors of the team.
- No whining

10
AGREEMENTS

Before you can become a full fledged DARC SIDE member there are some forms that you MUST fill out. These forms prove that you read this guidebook and they let us know you are serious about being a member of the team. They also register you with the FIRST organization as a student on a team and enable you to travel with us to events. Remember, these are important documents, so take your time to read and understand them before signing them. Students over the age of 18 must still present forms with a parent or legal guardian's signature and cannot sign for themselves. We will accept scanned versions of these documents emailed to robotics@da.org.

The following documents are explained in this section. Please submit or review the following:

- DA Student Handbook (Review and Sign)
- Student Safety Agreement (Submit)
- STIMS Information (Submit through firstinspires.org)

10.1
DA STUDENT HANDBOOK

Participants of FRC are expected to continue following the rules stated in the Durham Academy Student Parent Handbook. Please take the time to review the parent student handbook you received at the beginning of the year.

10.2
SAFETY CONTRACT

Students are required to submit a signed safety contract before handling tools in the robotics lab or physics lab. This document can be found on the Veracross Team portal page. This document is to be signed by both the student and parent.

The safety contract must be signed and submitted each year of participating in FRC.

If the student has taken the robotics class in the fall of the same year as participating in FRC, this document would have been already completed. A new signed safety contract will not need to be submitted.

10.3
STIMS - STUDENT TEAM INFORMATION MEMBER SYSTEM

The Student Team Information Member System (STIMS) is the online registration system that FIRST uses to register all team participants (including mentors and parents) with the team they are participating with. This process is completed online and requires a valid email address for both the student and parent completing the process. Because this link is subject to change, it will be emailed before the start of each season.

As a student, your registration in STIMS is a requirement before you can attend an event as a member of the DARC SIDE. Your registration will be checked periodically throughout the year and you will be notified if you have not completed the process. You will not be allowed to participate in certain team events if you have not completed this process. We recommend that you complete the registration process for STIMS as soon as you can.

10.4
HANDBOOK AGREEMENT

I certify that I have read and understand the information presented in this team handbook. I/My Student understands the requirements for becoming a team member on the DARC SIDE and that if I do not meet those requirements that I may be asked to stop my participation in the team's activities.

DARC SIDE Member Name: _____

Signature: _____

Signed Name: _____

Signed Date: _____