



# TECHNO TITANS Team Handbook

## TEAM # 1683

FIRST Robotics Competition 2011

<http://technotitans.org/>

FRC Championship 2010



FRC Championship 2007



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With our deepest GRATITUDE and COMMITMENT to our SPONSORS:

# SIEMENS



# WHO ARE THE TECHNO TITANS?

The Techno Titans Robotics team mission is to:

Strengthen engineering knowledge and skills among members. This is accomplished through:

- Direct mentoring from technical professionals from Nordson Corporation and Siemens Industry Inc.
- Safety and Engineering workshops
- Participation in National Engineering problem solving competitions
- Associations with like minded individuals and organizations within the competition and including our school's FBLA, TSA and other extracurricular teams.

The Techno Titans strive to develop a culture that encourages young people to pursue educational and career opportunities in Science, Technology, Engineering and Mathematics (STEM). The team is an extracurricular academic team that depends upon the triad of students, parents and adult volunteers (mentors/teachers). The team is built upon three key characteristics: Teamwork, Innovation and Determination.

## WHAT IS FIRST?

The Techno Titans Robotics team is a part of the FIRST Robotics competition. FIRST, For Inspiration and Recognition of Science and Technology, which aims to help high school students get a glimpse of the world of science and engineering ultimately assisting them to choose a career in a technical field. This is accomplished through building a robot and competing in competition allowing students to interact with professionals in many fields. To list other goals FIRST and our team strives to accomplish:

- GAIN INTEREST IN DIFFERENT FIELDS OF SCIENCE AND ENGINEERING
- DEVELOP LEADERSHIP SKILLS
- DEVELOP OVERALL CHARACTER
- BUILD SELF-CONFIDENCE
- LEARN TO WORK IN A TEAM ENVIRONMENT
- PREPARE STUDENTS FOR REAL-WORLD SITUATIONS
- DEMONSTRATE GRACIOUS PROFESSIONALISM AT ALL TIMES

## Gracious Professionalism:

*"Dr. Woodie Flowers, FIRST National Advisor and Pappalardo Professor of Mechanical Engineering, Massachusetts Institute of Technology, coined the term "Gracious Professionalism."*

*Gracious Professionalism is part of the ethos of FIRST. It's a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community.*

*With Gracious Professionalism, fierce competition and mutual gain are not separate notions.*

*Gracious professionals learn and compete like crazy, but treat one another with respect and kindness in the process. They avoid treating anyone like losers. No chest thumping tough talk, but no sticky-sweet platitudes either. Knowledge, competition, and empathy are comfortably blended.*

*In the long run, Gracious Professionalism is part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity."*

-USFIRST.org

# COLLEGE & CAREER OPPORTUNITIES

The Techno Titans FIRST program is an excellent way to explore STEM education.

As a result of the FRC program, students will be exposed to many principles of engineering and the mentoring skill that the engineers of our sponsors (Nordson Corporation and SIEMENS Industry, Inc.) provide. We recognize the possibility that not all students will go to careers in engineering. It is our goal however to expose all the students to technological careers including but not limited to engineering.

**There are many scholarship opportunities associated with the FIRST program. The coaches/parent NEMO's will be providing information regarding these as soon as they are made available. There is also information listed on the FIRST web site at USFIRST.ORG.**

By being an eager participant in the FIRST Robotics program, you can qualify yourself for many scholarships. Through FIRST, more than \$8 Million dollars in scholarships are given out through more than 59 colleges and universities in US and Canada. Moreover, FIRST is a much respected organization among many top universities in the US, and they definitely increase your chances of getting in and acquiring scholarships (Of course, grades pending). The more you do in FIRST, the more experience you have under your belt which can really help you at future jobs and other endeavors. One of the goals of FIRST is to create the leaders of tomorrow but that can only happen if you make yourself an active and keen participant in FIRST.

During your Junior year, it is important that you concentrate on the skill need to score high on the ACT and SAT tests as many scholarships and college admittance is based upon these scores, as well as high school transcripts.

Scholarship opportunities for the new FIRST Robotics Competition season are typically finalized by September 30 of the previous year. Scholarship offerings posted on the FIRST website by September 30. Deadline for scholarship application submissions is typically early to mid March. Scholarship contributor selects recipient by EARLY APRIL 2006 and notifies FIRST of recipient's name and team number. Scholarship recipients will be recognized at the FIRST Robotics Competition Championship in mid April.

## QUALIFICATIONS

Qualifications to be a Team member are important to ensure the goals and objectives of the team are accomplished with quality and efficiency. There are minimum qualifications to be eligible for the Club / Team.

*Note: All interested students are part of the BEST team for the first semester. During the second semester only **selected** students become part of the FIRST (Varsity Level) Team until the end of the school year.*

What makes a good team member? The list below is some of the attributes that are looked at during the selection process.

### **Application:**

Each student is required to complete an application. The time lines and directions for the application are very specific. Care should be taken to complete the application as neat and through as possible. The student response portion should be composed with care. It may be word processed and attached to the application, if preferred.

The **parent section** is also very important. Take care to see that it is complete. If there is a language barrier the student may translate for the parent. Student should indicate that it is translated in the heading of the document.

## **Criteria for Membership on Techno Titans Robotics Team**

### **1. Members must maintain academic eligibility as per school policy-**

Periodically through the year the roster will be checked with the main office for compliance.

Positive learning habits are related to study skills, classroom assignments, grades, classroom/school involvement. A student's current grades and past achievements are powerful statements about his or her learning habits.

Dropping grades and failure to meet eligibility requirements may jeopardize your spot on the team. All Team members will be expected to maintain at least a C+ average in all courses.

Any Team member that falls behind in their studies will not be allowed to travel with the team until their grades are once again at or above a C+. If no improvement is shown, you will be removed from the team and will not be allowed to attend any meetings or events.

**2. Members must attend the Tuesday/Thursday meetings and Team Functions-** Attendance and punctuality are indicators of a student's commitment to their education and future. A team member needs to be available and ready to participate as much as possible. When asked to participate, establishing a record of dependability and punctuality is essential to team organization and efficiency.

**3. Parents of members are expected to participate in team activities and help in team operations.** Techno Titans NEMOs is a group dedicated to parents of the Techno Titans.

This helps parents to stay involved in our team and contribute in ways that they can. Over the past few years, TTNEMO is responsible for starting and maintaining our website group, various fund-raisers, events and public relations with the community.

**4. Members will take a course or workshop related to robotics per committee approval-curricular or extracurricular –** Most important of these is the shop safety orientation. No member can participate in shop or pit activities without taking this orientation and safety assessment.

**5. Demonstration of Appropriate Behavior -** The Techno Titan Robotics Team is a unique team of students and adults. We all rely on each other for the success of the group. Everyone is expected to bring the best of their abilities to the group. The competition each year is both expensive and time consuming and it is expected that all involved will behave as motivated young adults with the greatest regard for others and integrity.

**a. Consistent Demonstration of Good Judgment and Positive Behavior:** Each team member is an ambassador of our team. Team members need to be role models for other students to emulate and respect. Solid behavior choices should to be demonstrated at all times, in and out of school activities.

**b. Ability to commit to a Project:** Starting a project and following it through to the end is critical to team performance. Team members need to dedicate themselves and not to get side tracked or discouraged. Your word is very important. **Don't take responsibility you can't perform and ask for help if you are having problems with a project. There is no excuse for a broken promise in this project.**

**c. Ability to Work both independently and as a Team Member:** Being able to be a team player, doing what is needed for the team is an asset to all. However, working independently with little or no direction shows dedication and willingness to learn.

**d. Interest in Science, Technology, Robotics and Related Fields:** The team member needs to have genuine interest and an overall goal related to these fields of study. Activities, classes and career choices demonstrate this.

e. **Demonstration of Honesty and Integrity:** Honesty and integrity are looked upon as important attributes of a quality person.

f. **Time to Spend on Activities:** This team requires many hours of a student's free time.

Careful planning and scheduling may be required to stay actively involved. In some cases, choices as to other activities may need to be made.

## Selection Process: Techno Titans FIRST COMPETITION TEAM

Students successfully completing the fall phase will be selected to the official FRC team after the evaluation of the student application. The placement on the official team will run until the end of the FIRST season unless situations arise that would put a team member's status in jeopardy. It is during this period that team leadership will evaluate the abilities of members for placement in the positions as drivers, pit crew, etc. Positions are subject to change according to the needs of the team and performance of the members.

**All team members must reapply to the team each year. Placement on the team is not automatic because of experience.**

## Team Assignments

Team leadership has determined the following 5 sub-teams and their major objectives. You will choose your top choices for team assignments as listed in the student application. These choices will not necessarily guarantee your assignment to that sub-team. Sub-team leaders and team members are divided into sub-teams based on their interests and expertise. Sub-teams are developed based on the size of the team, the nature of this year's competition, and the availability of mentors. Students may be part of more than one sub-team based as needed.

**All team members will be organized into one of the following 5 sub-teams:**

**1. Mechanical Sub-Team (10 students)**

Design, prototype, manufacture and test the major physical components of the competition machine. Designs and products may include; any moving mechanical parts, assemblies and systems. Such systems that are typically expected are: chassis, drive train, game-piece manipulator, and other robot capabilities (which varies according to the GAME design: may include, lifting, storage, ball control, pneumatics, etc...) Additionally responsible for the construction/maintenance of the robot's shipping crate and any "mock arena" construction.

**2. Electrical Sub-Team (3 students)**

Design, prototype, manufacture and test the electrical circuit that carries the power to all of the robot systems; including the motion (motors/servos), control (computer/sensors) and battery maintenance. This team will also ensure that all connections are stable, well insulated and grounded. Maintain solid and safe electrical connections/circuitry throughout the competition.

**3. Programming (5 students)**

The primary role of the programming team is to create a simple, efficient control system for the physical components built by the mechanical team. In addition to making the control scheme intuitive for the drivers, the program should be entirely bug-free. With the robot often having less than 20 minutes of actual competition time, any time lost due to programming is unacceptable.

In summary, the duties of the programming team in order of importance:

- Create a working control scheme that allows for a drivable robot
- Make code readable and accessible to your team mates
- Commit and commit often, so we have a detailed backup log as well as up to date code always available
- Incorporate sensors into the control system

#### **4. CAD (4 students)**

Design parts, assemblies and systems of the robot in 3-dimensional space on the given computer program. This design enables the team to spatially perceive components of the robot design and to prototype the effective motion of the robot. Because the sponsor of each competition changes, the CAD team must be flexible in using several software interfaces.

#### **5. Management (10 students)**

The objective of this team is to maintain team management;

- a. Coordinate the integration of subsystems (mechanical, electrical, programming) onto the competition machine.
- b. Maintain the schedule/deadlines for the competition (design/strategy, brainstorming, prototype, build, test and ship).
- c. Prepare for competition weekend(s): assemble scouting team assignments/scouting documents & robot shipment, pit design and pit requirements (banner, toolboxes, shelving, power, etc).
- d. Identify a Driver team, pit crew and a safety captain who will maintain a safety logbook and lead a safety presentation for the team and take responsibility of safety for the team at competition.
- e. Lead team fundraising objectives
- f. Coordinate team outreach or public relations opportunities (including school contacts, website, community presentations, t-shirt design and other team "publicity" events)
- g. Maintain a team "reputation" that will be expressed by the ENTIRE team on competition day: (includes: media relations, spirit, judges questions, transportation)
- h. Schedule and organize the team's travel plans

## **PARTICIPATION**

The FIRST Team requires many hours beyond the normal school day. All team members are required to participate in after school workshops, events and other team activities unless a valid reason for absence is provided. Usually the team meets Tuesdays and Thursdays (unless otherwise announced) during the spring semester from 3:45pm to 6:00pm. These are mandatory after-school meetings that focus on team building, and sub group work on a variety of tasks.

A formal roll call will not be taken during meetings and other activities, but the absence of a teammate is noted because each student is required to sign-in and out for each team work session. It is understandable that team members may be bound to other extra-curricular activities, such as other teams or clubs, but it is expected that the necessary amount of time be spent with Robotics. Students that take active and productive roles in the team will be rewarded by receiving important responsibilities. Those who are lazy, unproductive, and lack the dedication to attend all or most meetings and activities will not be entrusted with the same kinds of responsibilities. If a team member

wishes to do something important, they must first show that they will follow through to the end and not leave tasks unfinished. This is to ensure that the team works efficiently and effectively.

## SCHOOL WORK

Each team members are expected to maintain all their grades and class work during the entire time he or she is on the Team. As a Techno Titan FIRST Team member, you are held to a high standard that many other clubs or teams do not require. Our high standards and expectations are one of the strengths of our team.

### **Grades:**

All Team members will be required to maintain at least a C+ average in all courses. Any team member that falls behind in their studies will not be allowed to travel with the team until their grades are once again at or above a C+.

### **Travel Assignments:**

When we travel you are required to get all class work, assignments and readings before we leave. Please allow teachers several days to get these assignments ready for you. Getting these assignments is your responsibility. Upon your return to school all the assignments that have been missed will be due unless your teacher says otherwise.

## BEHAVIOR

A Club/Team member's behavior is under scrutiny, at all times. It is very important that you understand that you represent Northview High School, Nordson and SIEMENS corporations and foremost your team, Techno Titans.

### **School:**

Your behavior in school and specifically in the classroom is a message to all regarding the caliber of students on our team. You are looked upon as role models, and examples of the best students our school has to offer.

You are expected to be polite and respectful to all staff members and refrain from activities that are considered disruptive. Any club / Team member receiving a disciplinary action of any type is subject to review by the coaches.

If you think you shouldn't do it, don't do it.

### **Events:**

All eyes are on you every minute you are in public. Your behavior is a direct reflection on your character and on our team. A judge or member of another team may over hear what you say to one another and how you say it. Even the expressions on your face and body language may bring unwanted negative attention and bad impressions.

We are a very close family when we travel and conflicts may arise as a result. Students should refrain from rumors, he-said-she-said, and negative comments about one another. If a problem arises with another student you are requested to speak to a coach immediately. Students are not allowed to have physical conflicts with each other. If a problem such as this arises, both students may be disciplined as per school rules. If this occurs at a competition, you will be bought a plane ticket back home at your expense. We will not tolerate any disrespect or disruptive behavior.

### **Co-operation:**

Students are requested to cooperate at all times. This is to mean that if a coach requests you to do something you will comply with the best of your ability. Ignoring the directions or requests of a coach is not in the team's best interest. If you feel a request is out of order, you are encouraged to complete the task then speak to the coaching staff at a later more appropriate time. Disrespect towards any coach or mentor will not be tolerated and you will receive severe punishments and possibly removed from the team.

### **Inappropriate Behaviors:**

These behaviors include but are not limited to the following:

Running in hallways, pushing and shoving, name calling (negative), making messes, fighting, swearing, stealing, and all other activities that reflect negatively on the team.

### **Boyfriend/Girlfriend:**

In the event that a relationship develops or is ongoing, there are certain guidelines that must be adhered to at all times when engaged in team activities local and away.

***Hand-holding, hugging, kissing and other expressions of affection are prohibited at all times. The couple must also travel in a group at all times. Couples may not wander off or sit alone. In other words, they should not appear as a couple but as part of the team.***

***Common sense should prevail at all times.***

The coaches reserve the right to discipline a Club/Team member as necessary for safety and the overall good of the team. The parents will be informed of any disciplinary actions as soon as possible.

## **PLAN OF ASSISTANCE / PROBATION**

There are several reasons why you would be placed upon probation and a plan of assistance. A Plan of Assistance is method of identifying a behavior and outlining the steps to correct the behavior within a specified time length of probation. The plan is a corrective method designed to assist the student and keep him or her eligible for the team.

### **Academic:**

Monitoring your grades will occur on a regular basis. You are expected to be making academic eligibility as per school policy and maintain grades of at least C+. If we identify a class you are having difficulty in that may affect your GPA in a negative manner, you may be placed on probation with a Plan of Assistance. This written document (Plan of Assistance) will be provided and signed by the student and shared with the parents and the administration of the school. This document will contain suggestions for improving and correcting the behavior, a timeline for the correction and a clear explanation as to what is expected. Included will be the outcomes and consequences associated with the behaviors.

You also will be placed upon a plan of assistance if you receive the grade of "F" in any class any marking period regardless of grade point average. Two "F's" may result in dismissal from the team.

At the end of the probation length of time if the situation is not corrected you may have probation extended or you may be dropped from the team. This decision will be made after considering the effort and progress made during the time length.

# AFTER SCHOOL ACTIVITIES

Our activities begin after the school day ends, usually 3:45pm. During the competition season we will work each day as required. Students must provide their own transportation home. A phone will be available for student use.

## Procedure:

1. As soon as school is dismissed you should go to your locker and secure all materials including homework that you want to take home and come to the FIRST room (R796). This is because the commons area is officially off-limits to Robotics student during these work sessions.
2. During these after school activities students will work on many aspects of the competition. This is the time that the focus of your sub group is developed. Coaches are supervising each sub group on a rotating basis.
3. There are some specific tool skills that all students will learn during the after school activities. These include using a soldering iron, wiring connectors, drill press, grinder, dremel, hacksaw, wrenches, multimeters, and power hand tools.
4. Students will also learn about the process to design our robot. SIEMENS and Nordson engineers will present lessons on the usage of motors, the control system computer interface and the programming language. Presentations will also include the process of designing a robot for the FIRST competition that will occur second (spring) semester.
5. Students are encouraged to spend as much time as possible above the required activity days. This very important to get the project completed. Attendance will be taken and recorded in the student logbook giving credit for time spent on the project.

## Other Responsibilities:

It is understood that our students are very busy in many other school activities. These activities are encouraged and supported by our team. It is the responsibility of the student to manage and balance all their activities, informing the sponsors of their commitments.

Sports teams provide different challenges and different stress upon your time. It is important to communicate with your coaches to work out the timing of your activities. Often these activities can be accommodated to the satisfaction of both activities. There are some instances however, where the timing cannot be resolved. **In this case you may have to choose which activity you will be putting your time and effort into.** Please discuss this problem with a coach before you make a final decision.

# HEALTH & SAFETY

Students should understand the risk involved with Robotics competitions. Students and parents are required to read and sign a safety and release of liability (covenant not to sue) form for each competition organization as well as for each event location (local kickoff, scrimmage location). These legal documents will be collected and organized by the team coach. The introductory form(s) to sign for FIRST is located at STIMS ([Student.team.information.management.system](#))

Registration at STIMS is also the first step in applying for team participation. Both **students** and **parents** must complete the electronic documents posted by the FIRST organization at the STIMS web portal to be listed on the team roster.

Students will read and acknowledge the USFIRST Safety Manual. [The FRC 2011 Safety Manual](#)

Students will participate in a safety training class and successfully complete the safety written test prior to working with equipment in the shop.

## COACHES

The coaches of our team are dedicated teachers working hard to make the season a success. Most of the work is done when we are not looking. Their work includes team organization, financial planning, overall team management and much more.

While we are on trips, they are considered to be like parents. From taking care of the students to making sure we are doing fine, their efforts are immeasurable. They are always on the lookout for us and therefore we should obey them at all times. Misbehavior towards coaches (especially during competitions) will result in severe consequences which will lead you to be removed from the team and face consequences from the school.

If you have any concerns with the activities of a coach or their behavior toward you or others please talk to a team leader first. If the situation is not resolved the next step is to talk to the school administration.

## ENGINEERS

Extremely dedicated and talented, the engineering mentors from SIEMENS Industry Inc. and Nordson Corporation help us throughout the season. The quality of their efforts can be seen in our robots. Like the coaches, these people are a great source of wisdom and knowledge to you.

At all times, during build season and competitions we give these people all the respect that we can.

While their decisions might not seem right to you at times, over time you will come to realize they do everything from experience. To earn a spot working with the tradesmen is an honor and achieved by visible effort to contribute to the build and pit team efforts. You should maintain a positive attitude and thank them for their work and dedication. Their work is voluntary and the benefit is for you.

## WORK AT NORDSON

Selected students may get a chance to work with the engineering mentors directly at Nordson Corporation. This opportunity will be set up in advance; such that the machine shops will be available for student use. Transportation is the student's responsibility and the student will be notified on the exact date/time/location we meet. Before you can visit the facility, a list of students going is required to be sent to Nordson as a security procedure, a parent signature will be required. When you arrive, you will be asked to Sign in and will be given a security badge. Sign out when upon leaving and return the badge. Stay with the group at ALL times, and never go into areas you are not supposed to. Remember that we are guests at Nordson, and we should watch our manners. Throw any garbage, keep the place neat, and watch your behavior. It is a huge privilege to work there. Safety rules are in effect at all times and safety gear must be worn. There are also many other workers/officials there who you must show utmost respect and demonstrate appropriate behavior as representatives from our school.

## FUNDRAISING

All students are required to participate in all team fundraising activities. The funds raised are typically used for student expenses while we are traveling. Travel costs are supplemented by money from the team treasury obtained as a part of our sponsorship grant.

Every student has an individual fund raising account maintained by the coaches. Profits made from fundraisers are accumulated in these accounts and spent for travel expenses with the team. In the event a student leaves the team the travel account is forfeit and is absorbed in the general treasury of the team. The Techno Titans Financial parent group will soon be responsible for arranging various fund raising activities throughout the year. The fundraising committee is always open to suggestions of ways to earn money for the team. Please contact a coach with your ideas. If parents have an objection to their student participating in any fundraising activity they are asked to speak to the coaches for an alternate method of replacing this revenue for their student.

## **T**RAVEL (if applicable to 2<sup>nd</sup> regional/international championship)

Traveling as a team is very exciting and rewarding and often the highlight of a student's memories. A great deal of planning and organization is required to coordinate all the associated activities. A strong effort is made to make the travel to be an educational / cultural experience as well as the basic competition. Safety is always the major concern.

All team members are eligible to travel to all events unless otherwise exempted. A student may be exempted from travel due to a prior commitment approved by the coaches in advance or disciplinary reasons from the coaches or principals. All team members are expected to attend all events. Failure to attend an event may result in dismissal from the team.

### **Air Travel:**

Traveling on aircraft is fun and exciting for most team members. There are special procedures we must follow to ensure safe and efficient travel.

We will meet at NHS at the designated time and location. Please be on time, as we will not wait for students. Have a backup system to your alarm clock and travel to the school. Note: All students will assist in loading the luggage on the bus and unloading at the airport. Having several students in the bus handing the luggage out to the waiting students best does this. We must be as quick as possible.

At the airport after unloading the luggage we will form two lines of students moving to a designated area. It is key to stay out of the way of other travelers and to keep talking to a minimum at all times. Once inside students will stay in the designated area at all times. Luggage is not to be out of our control at any time. If students need to use the restroom he or she will need permission of a coach. When we are ready to process your luggage and tickets students will form a line based upon alpha order. Mr. Weinberger will see that the team proceeds in orderly fashion.

### **Packing:**

A word on luggage is critical at this point. It is very important to pack efficiently. That means to bring only the clothes and items that are necessary and required. Remember students must carry their own luggage in the airport. There is no prize for the largest luggage. You are only allowed 1 suitcase, and one approved team carry-on. All luggages must be identified with the name and address on a tag prior to entering the airport. Additionally, with the growing strictness of flying regulations, please check the flight websites for packing guidelines. We do not want to be held back for any reason and the security checkpoint is a critical step before even approaching the airline gate.

### **Counter Procedure:**

Students will be processing their luggage and ticket at the counter. Again, it will be alphabetical order – except the coaches who will go first to assist the process. At the counter students will show the agents their **school identification**. It is important to have the identification ready to be shown. You will also

be asked several questions regarding your luggage. This is a serious time pay close attention. When complete move to designated location while the others are processed.

### **Security Check:**

When all members have been processed at the airline counter, the team will proceed through the security checkpoints. At this point all metal items including change, cell phones, pagers and keys should be placed in the carry on item. Form a single line placing items on the conveyer when appropriate. Wait to be directed through the detector by the security person. Collect all items and wait at designated area. Here you will need to stay close to wall out of traffic area. As a reminder, keep talking to a minimum and wait for directions.

When we have all gone through the process we will proceed to the gate. Do not stop at the bathrooms, get a snack or wander away from the group. Permission will be given later if time permits.

At the gate find a seat, stay with our group and wait for further instructions. If time allows, you will be allowed to go to the bathroom or to get a snack. NOTE: We travel in groups of three or more at all times. If leaving your carry-on please ask another student to keep control of your bag.

We will take attendance several times in the airport. Please be aware of your group and refer to the attendance process outlined in the section on attendance.

### **Plane Entry:**

The coaches will issue a boarding pass at the gate. This process will vary depending on the airlines and the workers at the gate. If you are given a boarding pass, do not put it away at this time, have it ready for boarding. A coach will collect the remaining boarding passes, for safekeeping. Directions will be given for you to board the plane. When entering the aircraft, please go to the assigned seat. Locate an empty spot overhead and store carry on or place it under the seat. Once seated follow all directions as given. Trading seats is only allowed with the coaches' permission. If the flight serves food or drink please be very careful to avoid spills. If you feel ill or need assistance please get the attention of one of the coaches. Some persons have a problem with the air pressure and the effect on the ears. Chewing gum, swallowing frequently sometimes helps. Consult your doctor prior to travel if this is a known problem.

### **Plane Exit:**

After we land exit in a safe manner. Be courteous to others as you exit. Remember to get the carry-on luggage and other materials before leaving. Upon exiting the plane, the team will gather to the side out of traffic. Listen and watch for the directions of the coaches. We will then proceed after attendance to the baggage area. Walk in double file lines to the side, away from traffic. At the luggage claim wait and watch for your luggage. Once you get your luggage go to the designated location and wait for directions. We will follow earlier directions for loading into the waiting transportation.

### **Bus:**

Often we use buses as our mode of transportation. We will store luggage in lower compartments or on another bus if needed. Do not open windows without permission. If having a snack or drink dispose of the mess when finished. When leaving the bus make a check of the area to make sure all belongings have been accounted for and all trash has been picked up.

### **Car:**

Often parents, coaches and engineers will transport students to different events. At all times, all persons must wear seatbelts.

# COMPETITIONS

Our team goal is to attend two regional and the World Championship Event, held in St. Louis, MO in April 2011.

## **Regional Events:**

A regional event may be close or a distance away. Which regional events we attend is dependent upon location and timing of the events. Usually we do one local event and another where we can best showcase our team and are exposed to a variety of quality robots.

There may be instances where we are required to travel by plane to the events out of state. Refer to the section on travel.

Most regional events follow a set pattern:

**Wednesday:** This is the day we typically arrive on; this is the day before the competition starts.

Depending on arrival time we try to schedule in tours, sightseeing or other team events. Some evening activities may be planned depending on our location and time of arrival. Prior to our arrival, all students will be given a schedule that outlines their responsibilities every hour of the day. All students are expected to follow this schedule as closely as possible. This should be kept with the student at all times.

**Thursday: *This is the day of arrival for LOCAL regional competition.*** The drive team and some of the pit crew arrive at the event early to set up the pits, unpack the robot and start the robot inspection process. The main team will have breakfast together in a private dining room at the hotel, if available. The main team will stay at the hotel using the time for a study period. The main team arrives at the venue before noon.

When the team arrives it starts the competitive assessment process, locates a place in the stands, and walks around getting to know the other teams by trading buttons with them.

Usually our robot will practice several times during the afternoon. While waiting for our robot, the photo/scouting team is taking pictures of each robot, and the competitive assessment team is reviewing the performance of the other robots. Usually the day ends at 5:00pm. The drive team and pit crew may be required to stay and work on the robot until the pit closes.

The remainder of the team will go to dinner as a group if possible. When dinner is done the team will return to the hotel depending on time. A meeting is usually held within the hotel in a meeting room at about 10:00pm. Lights are out at 11:00pm.

**Friday:** In the morning the team will have breakfast together. The entire team will arrive at the competition as soon as the venue is open, typically 8:00am. The main team will locate a place in the stands, while the photo and competitive assessment teams work on their assignments. The video team will prepare to film each match and replay it at the fifth quarter (the debriefing after the match has concluded) to review the performance and strategy. We may have as many as four or five seeding matches on Friday.

**Saturday** morning the pits open up at 8:00am. Our team would have had breakfast earlier that morning. Upon entering our team again locates a place in the stands. Opening ceremonies start at 9:00am with the final seeding matches following. Depending on the format of the competition the finals occur in the early afternoon. The format of these finals varies from year to year.

At the conclusion of the competition there is an award ceremony where the remaining trophies are passed out. When this is complete the pit crew and drivers pack up the robot for shipping back to the school. This is usually around 5:00pm. Due to the distance and the cost of transportation we usually stay Saturday evening. Dinner will be at a convenient location.

**Sunday** morning we may be leaving early depending on transportation availability. **A local event will be formatted the same way with the exception of the hotel, transportation, breakfast, and free time.**

## Competition Protocol:

There are certain practices that we have found to be very successful and have earned us many rewards and the respect of the FIRST community.

**Cheering:** *Cheering is more than yelling at the top of your lungs.* True cheering is enjoying the event and celebrating the excitement of the moment. Organization is the key to this being a powerful tool. Your spirit leaders will give you direction and guidance for this activity. You are not expected to be cheering 100% of the time, however, when we are cheering all team members are expected to stand and cheer to the best of their ability. Sitting in the stands looking bored, playing video games, carrying on personal conversations while others are cheering is not good for the team image and is not permitted.

**Award Ceremony:** During the ceremony we will applaud the teams that are winning awards. When we applaud we will stand to show our respect for what they have accomplished.

**Greetings:** There are certain persons in the FIRST organization that we make an effort to greet on a personal level. If you see Dean or Woody enter the area and you have not said hello, make an effort to go to where they are and greet them. If they are engaged in a conversation with another person please be respectful at all times.

**Litter:** If you see a mess (paper or trash) you should make an effort to pick it up. That goes for the area you are sitting as well as any other location in the arena.

## Things We Do Not Do At An Event:

- Wearing of personal music devices is forbidden while in uniform or at an event.
- Uniforms may not be altered or worn in any manner not approved by the coaches.
- Students may not play cards or any other games at the event.
- Our team will not engage in negative behavior toward another team or team member.
- Our team will not display displeasure over any decision by a referee or judge.
- Team members will not exchange negative remarks to each other, no matter what the situation.

## FRC Championship Event:

The championship event is very similar to a regional event in many ways but on a much larger scale. There will be teams present from all over the Nation and the World.

**Wednesday** we try to arrive very early in the event city. After proceeding to the hotel to drop off our luggage we typically spend the majority and remainder of the day at the event complex. Students are free to explore. As always, students will travel in groups of at least three persons at all times. Students are expected to be back at the hotel at the predetermined time for a team meeting.

**Thursday** morning we have a group breakfast and all proceed to the event. The pit crew and drivers will set up the pit and prepare the robot for inspection. Button trading, scouting involving the photo and video teams and other specific events occur throughout the day. We will have two practice matches spread during the day. All team members are required to stay at the event and with the team until released by the coaches.

We will provide a refreshment station for our team. Team members will be able to get drinks and snacks there at no cost. Lunch is available from several vendors in the area, for a cost (personally incurred).

If the practice rounds finish early enough students will be released to go to local activities. All team members will be required to be back at the hotel at the pre-determined time. Please allow enough time for transportation. There will be a team meeting at a specified location and time. Typically we have a meeting every evening to recap the events of the day.

**Friday** will start with opening ceremonies in the main arena. The seeding matches will follow this spectacular event. We will usually get three or four matches that are spread throughout the day. Friday

is also the day when the judges will make their rounds to each team. There will be two Communications sub-team students in the pits at all times. This is the last opportunity to be proactive regarding the Chairman's Award. Every effort must be made to show all the great things our team has done. The team will be dismissed to go to local attractions if time allows. The scouting team will meet back at the hotel to complete competitive assessment materials in preparation for the competition on Saturday. Students will be required to be back at the hotel at the pre-determined time. Please allow enough time for transportation. There will be a team meeting at a specified location and time.

**Saturday:** After breakfast as a group, we will proceed to the competition as soon as the pits open. At 9:00am there will be another opening ceremony. You will not want to miss this event. We will sit together as a team. The seeding rounds continue until about noon. Depending on the configuration of the competition, the finals will be held in the afternoon.

Following the last matches, the award ceremony starts. This ceremony takes about 1½ hours. The team will sit together for the duration of the ceremonies. Following the last award FIRST will provide an entertainment spectacular that is always a treat to see. You will not want to miss this.

There will be an FRC team party following the awards that will take place in event center. You will need some type of entrance pass; this varies from year to year. At this party there will be food and sidewalk entertainment. Many rides and attractions will be open for a limited time that evening. You will be required to be back at the hotel at the pre-determined time. Please allow enough time for transportation. There will be a team meeting at a specified location and time.

**Sunday:** What we do will depend on arrangements, funds and transportation. This arrangement will greatly depend on student fundraising activities. There will be an opportunity to help plan additional arrangements as soon as details are released by the FIRST organization.

### **Championship Set-up:**

The setup of the championship varies each year. In 2011 the event will be held at the Edward Jones Dome in St. Louis, Missouri. There will be a main stage that will host the opening ceremonies, some matches and the finals. In addition there is a main pit area. Within this air-conditioned area each team will have a pit space that may be arranged numerically or by division. Imagine an area that will hold over 300 teams and the team members associated. This varies from year to year. Adjacent to the pits is the main domed stadium that will house playing fields to hold the seeding events. Which field we are on and when we will play will depend on the schedule provided at the start of the tournament.

Depending on where we stay, the transportation available will vary. If we stay off site we will have our own bus transportation.

## **HOTEL**

When we travel we often stay at a hotel for several nights. **Students will be organized into room groups of either three or four students, depending on quantity of students and room availability.**

**Students may be allowed to select roommates of their choice. There are no co-ed rooms; rooms are either male or female. Each room will have a coach assigned to monitor and coordinate activities, this includes room inspections.**

### **Check-in:**

When we enter the hotel students will go to a designated location to wait for keys. At that location students will need to be very quiet as to not disturb the other guests. The room captains will be given the room keys to distribute. Often each person will have a key. If this is not the case, each room will need to designate who has the key.

Students will proceed to the rooms as soon as key distribution is complete. If your room is not ready your luggage will be put in another room until your room is ready. Upon entering your room you should complete the room inspection form and have it ready for the coach.

Often there is free time in the hotel to get snacks, play in the game room or swim. If there is a pool a coach must be present to swim or use the hot tub. Appropriate attire is required. Please check with a coach if there is any question.

## PARENT RESPONSIBILITIES

Parents are an integral part of our team and are very important to our continued success. Parents are also a key factor in the motivation and dedication of their student. Supporting their son/daughter in all aspects of their team involvement is key to them getting the most out of the program. Parents should become active in the Financial Committee led by Mr. Jayant Ragde and Ms. Patti Everett.

Parents have several responsibilities, they are:

- To provide timely transportation for the student. Making sure that the student is at the required events on time and ready to participate. Often we will leave for a competition very early in the morning to facilitate transportation. Parents are expected to have the student at the designated location at the prescribed time. We will not delay transportation.
- Upon return from an event parents are expected to provide transportation at the designated time. Late transportation causes an inconvenience to all involved.
- Parents are expected to assist their student in all fundraising activities.
- Parents are expected to participate in the build season by assisting with the food service (support) and other committees that are provided by our NEMO's (Non-Engineering Mentor Organization)
- Parents are expected to provide transportation to local events, including Saturday work sessions, after school sessions and local competitions.
- Parents are expected to provide accurate medical information and to keep coaches informed of all changes.
- Parents are also expected to help the student with spending money as is appropriate when we are at events or competitions.
- Parents are encouraged to participate in team activities whenever possible.
- Parents will participate in the support category by forming teams that will provide breakfast and lunches on selected dates and at selected activities/events.

## E-MAIL

All students and parents are expected to have an **active e-mail address**. This form of communication is by far the fastest and most efficient mode of communication. Please provide your address to the coaches for the data base records.

If you do not have Internet access at home to participate in e-mail, you will be assigned an e-mail buddy. The e-mail buddy will pass on any important messages via the phone.

It is suggested that you monitor your e-mail twice a day, whichever time is most convenient for you. There are many free e-mail services please check with the coaches if you have any questions.

## OTHER COMPETITIONS

Our team is often invited to pre and post season competitions. Our involvement in these activities will depend upon timing and the availability of our team. Most of these competitions are local and will not involve organized travel to any great extent, as they are one-day events.

This is the opportunity for our “Rookies” to get the feel of real competition before the season starts. Often this is also the opportunity for our drive team to get practice and rookie drivers to see what it is all about. Examples include: VEX Robotics, FIRST Tech Challenge (FTC) and BEST robotics. Additionally, GA FIRST organization hosts at least one off-season scrimmage competition per year (usually in October) called GRITS.