

Team 467
Duct Tape Bandits
Handbook

2009-2010



Introduction:

FIRST Robotics Competition (FRC) is a unique sport of the mind designed to help high-school-aged young people discover how interesting and rewarding the life of engineers and researchers can be.

The FIRST Robotics Competition challenges teams of young people and their mentors to solve a common problem in a six-week timeframe using a standard "kit of parts" and a common set of rules. Teams build robots from the parts and enter them in competitions designed by Dean Kamen, Dr. Woodie Flowers, a committee of engineers and other professionals.

FIRST redefines winning for these students because they are rewarded for excellence in design, demonstrated team spirit, gracious professionalism, maturity, and the ability to overcome obstacles. Scoring the most points is a secondary goal. Winning means building partnerships that last.

Team 467 uses one phrase to describe the character of its members: "We not Me!" Each team member should strive to apply this philosophy to his/her every action as a Duct Tape Bandit. The winners of FIRST competitions are teams, not individuals. Being a team means not fighting over who is right or wrong. Discussion and compromise are the foundation for a successful team. Our robots are **student designed** and **student built**.

Calendar:

The Team Calendar is from July 1st to June 30th of the following year. We expect members to take part in events all year long. While we strive to have a regular build schedule many issues can change this schedule. Please see Team Calendar link on the Team 467 website for an up-to-date work schedule and calendar of upcoming events. <http://www.team467.org>.

Build season is the period of January through mid February (six weeks long). Kickoff is in early January. Following that the team will meet as follows:

- General Work Sessions: Monday, Wednesday, and Friday
 - 2:00-3:30pm Homework Only
 - 3:30-6:30pm Get Started (or continue with homework)
 - ~6:30pm Meal
 - 8:30 – 9:00 Cleanup + Wrap up (no cleanup on Friday)
- Targeted Work Sessions: Tuesday & Thursday
 - 6:00pm Get Started
 - 8:30pm – 9:00pm Cleanup + Wrap up
- Saturday
 - 12:30pm Get Started
 - 6:30pm Meal
 - 8:30pm – 9:00pm Wrap up

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- Sunday
12:30pm Get Started
5:30 – 6:00pm Cleanup + Wrap up

*** Homework comes first.***

Student Expectations:

Students will put priority on their grades over any team need. Grades are important. Students must complete schoolwork before participating in team work sessions and activities.

Read and understand all the rules of the competition. Understand our team's robot and competition strategy. Ask for help! If you don't know what is going on or are unsure how to accomplish a task assigned to you, ask for help.

At the end of the day, students are required to help clean up. If a student needs to leave early he/she should clean up their own area and then ask an adult what else they should cleanup before leaving. Students may not wander the building or go to their lockers without the permission of an adult.

Please leave and enter through rear Tech Ed Door.

All Team members must also follow the rules in the SHS handbook.

Respect:

Team members are expected to show respect to everyone. Students, please remember that all of the adults on the team are volunteers and are not receiving any pay to come and be part of the team. Please respect and thank them for this commitment!!

"Yes, respect is a two-way street and, when given, we will return respect for respect, tolerance for tolerance, acceptance for acceptance." -- **Theodore Bikel**

School Eligibility:

Success is an important part of FIRST and the team. It is not restricted to the robot, game performance, or how many trophies the team is awarded. Team members are successful only when they succeed in the classroom, and then participate in team activities. All team members are expected to make schoolwork and individual academic performance a priority over any team event or activity.

Any student member of the team that is struggling with schoolwork can seek help. The team will have resources available to help students with schoolwork. You do not need to be ineligible or on probation to seek/receive help – just ask!

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Team Meetings:

Student Steering Committee members and/or Student Leaders will run team meetings, with occasional mentor comments. Team Members are expected to participate in team meetings. Students are required to attend at least 10 meetings; there will be at least 12 meetings in total.

Family Brings a Meal:

Every family is asked to bring at least one meal during the build season. Mentors and students work very hard during this time, and it is important for them to be well nourished. People don't work well when they are hungry.

Meals include dinner during the week and weekends. What is made is up to each family. We have had everything from Mexican to Ham dinners. You will receive full information by email in December so that you can sign up for the meal(s) you'd like to provide.

Leadership:

Steering Committee

Team 467's steering committee is composed of dedicated individuals. The group's purpose is to manage the team's finances, organize travel, set team policies, discuss and handle team member issues and other general team management.

Student Committee members are there for student members to bring their concerns to. It is important that the every team member knows who is in the Steering Committee. This is to allow the students voice to be heard. If a team member wishes to join the Steering Committee at the start of a year, they must submit the required form before the deadline. All applicants will be interviewed by a panel chosen at random.

The committee is comprised of 6 people representing the team and one outside individual. Meetings are generally open to any team member who wishes to participate in the discussions; however, only committee members have voting power. Some meetings or topics that involve an individual team member or some other topic where confidentiality is important may require a closed-door session. Since the team is mainly made up of students they have the majority vote in the committee. **Note that sometimes the adults in the committee will make a decision in the best interest of the students.**

Composition

Adult Members: John Tsombakos, Raj Patel, and Ken Ouellette

High School Members: (4 students TBA)

Meeting Schedule

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Generally the committee meets once a month.

Student Leaders

Student leaders are students that have typically been on the team for one complete season. The prospective leader must have show technical skills and have good communication skills. Students must request to be a student leader; there is a maximum of two student leaders for each sub-team. In the event that there are more team leader openings than requests, the Steering and Engineering Committees will request students to take fill the openings. The Steering committee will review each applicant's academic standing. The Student leaders need to guide their sub-team, and bring them to a consensus. They will then represent their team to work with other Student leaders while being a part of the Engineering Committee with the adult mentors.

The Student Leaders are responsible for the robot design and construction. The student leaders will meet twice a week during the build season to vote and discuss on the robot.

Engineering Committee

Team 467's Engineering Committee is composed of engineering professionals from the team and student leaders. The general purpose of this committee is to guide and review student designs and ideas. The Engineering Mentors are there to guide the students. Generally the Mentors won't make a final decision on the robot unless the students cannot come to a consensus in a reasonable amount of time, in that event all mentors will come to a consensus as to what is in the best interest of the students.

The committee is comprised of 7 engineering mentors and student leaders. This committee will meet once a week during the build season.

Composition

Richard Cooper
Erich Dieffenbach
Callan McNally
Adam Jacobson
Ben L'Bassi
Kush Patel
Doug Peeke

Fundraising Committee

The Fundraising Committee is responsible for planning, coordinating, and implementing all fundraising activities in support of the program. It should involve as many members, adults and students, as possible and be fun. It should not be a burden to the team members or parent volunteers or conflict with other school, or community events.

The Committee is to become familiar with state and local requirements for fundraising. These include the school district policy for use of school grounds, equipment, food services, the local

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permits for solicitation, municipal regulations for public gatherings fire, curfew, traffic, food sales, health and safety; and regulations governing tax-reporting requirements.

Organization Structure:

Team Organization:

During the construction and competition season the team is organized into a series of teams with each team being lead by one or two student leaders. Below is a list of possible teams, which may exist during the season.

Mechanical Drivetrain Design:

- Responsible for selecting a drivetrain design that matches the team's primary strategies. They are also responsible for the integration of all components of the robot, so they must communicate with the other sub-teams.
- Will design the drivetrain, and chassis in CAD, select and design wheels, and procure and build all drivetrain parts, then assemble the drivetrain.
- Should interact with the all sub-team to determine the placement of components.

Mechanical Mechanism Design (often split in two groups):

- Responsible for designing any arm, gripper, manipulator, or other mechanism that will be used to play the game.
- Will design the mechanism(s) in CAD, select and procure parts, and build all mechanisms.
- Will be responsible for interfacing with the electrical and programming teams to communicate the needs for the robot mechanisms.

Electrical:

- Responsible for designing and laying out the electrical subsystem.
- Will implement all sensor needs, and make sure that there is appropriate mechanical design to accommodate sensors and electrical components.

Programming:

- Responsible for designing a program that accomplishes the needs of all the functions of the robot.
- Responsible for determining best implementation of autonomous modes, and should communicate sensor needs with the electrical sub-team.

Spirit

- Designs for team apparel and buttons
- Host fun team and interteam activities
- Record all team meetings and events through photo and video
- Chairman's Award submission (essays and presentation)
- Determine submissions/criteria for other awards: Woodie Flowers Award, Technical, etc. and help team achieve them
- Responsible for Web site updates (calendar, pictures, events...)

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Purchasing

There will be two individuals that all purchasing will go through (Raj Patel or John Tsombakos). NO mentor is allowed to purchase items with or without a Purchase Order (P.O.) unless either individual have approved it. If an item is purchased without approval and without a P.O., no reimbursement will be given. If an item is purchased with a P.O. and without approval, there is a risk that the purchaser will be billed and their ability to use any P.O. will be revoked. This is to control team spending as funds are dwindling and the School Department has mandated that the team strictly control its purchasing methods.

Donations

The team tries to fundraise to support its self, but it also depends on the donations of corporate sponsors. Parents/ Companies wishing to donate to the team may do so; letters can be given for tax deduction purposes. Parents wishing to ask about employee match can request the Steering/Fundraising Committees for the appropriate papers or any other information. We encourage parents to ask their places of employment for donations. Donations may be made to Shrewsbury Robotics.

Robot Design

Part of our philosophy is that our robot is student designed and student built. Sub-teams design their components of the robot and Student Leaders work together to incorporate the designs into one robot. They must meet all rules set forth by FIRST. Mentors are there to guide and review issues, but it is ultimately the students' decision. For better or worse, this will truly be a student designed and built robot.

Competitions:

Expectations at Competitions

- Team members traveling with the team to competitions are expected to participate at all times with a positive manner while on the trip.
- Team members are expected to cheer and do whatever is necessary to help the team be successful.
- Team members are expected to wear their team jersey, un-modified, at all times when traveling with the team.
- Team members will be participate in intelligence gathering and strategy meetings
- Field teams (Driver, Navigator, Human Player) members will selected before attending competitions. Students will need to try out for these positions. Teamwork, skills, knowledge of rules will be factors in choosing students for these positions.
- Note: The team is not responsible for lost or stolen items while traveling.

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Qualifications for Attending Competitions:

- Keep up grades and attendance at school (no exceptions)
- Sell minimum of 10 pies. If a member joins the team after pie sales, that member is required to pay the cost of 10 pies to the team (\$120), due to the fact that pie sales go towards lowering team's travel expense. The more pies sold, lower travel fees will result, if any.
- Exhibit appropriate behavior at all times. This includes behavior within the classroom and school as well as at competitions or events.
- Complete and return all paperwork and make all payments in a timely manner.
- Work a minimum of 72 **quality** hours to attend the Home competition, and 122 **quality** hours to attend the Away competition.
- Attend a minimum of 10 team meetings. If you cannot attend a team meeting you need to speak with John Tsombakos. **Prior** to the meeting!
- Participate with a positive attitude.
- Help in 20 shop clean-ups or otherwise equivalent work (must be agreed upon by mentors) and 3 dinner clean-ups.
- Would like your family to provide at least one team meal during the season. Feel free to work with other families and partner in putting on meals. Speak with Nancy D. if you have any questions, issues, or need dinner ideas.

Please note that the word quality above in bold. Simply showing up, signing in, hanging out, and leaving does not constitute "quality" and hours will be dropped from your total hour count.

If you or your family is unable to meet any of these requirements please speak with Nancy Donoghue or Raj Patel.

Team Member Conduct:

All members of the team are expected to exhibit exemplary behavior and act as role models for their peers and other team members. Team members will be in the public eye both on and off the playing field. Knowing this, you must conduct yourself accordingly. The actions of a team member are a direct reflection of themselves, their team, their school or corporate sponsor, and family. As a team member you are expected to wear team jerseys and colors with respect and pride in what it represents. "Good Sportsmanship" consists of respect for others and cooperation with teachers, coaches, teammates, and officials.

Depending on the severity and seriousness of a behavior issue the team member may be dropped from the team, put on probation, or given a verbal warning. In all cases the situation is expected to

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be rectified in a timely manner to the satisfaction of the school administration and coaches.

The Team asks that you treat everyone with respect. *Students, please remember that all of the adults on the team are volunteers and are not receiving any payment to come and be part of the team. Please respect and thank them for this commitment!!*

Post Graduates Returning/Joining Team 467:

Postgraduates are highly valued members of Team 467 and are welcome to contribute. Postgraduates need to recognize that they are no longer high school students but are adults as far as the team is concerned and need to act accordingly. Adult mentors will support them through the transition from team member to team mentor.

Postgraduates are expected to follow and role model all safety rules and behavior standards.

Each postgraduate will be assigned an adult mentor, who will meet with them to discuss what their role will be, and how their expertise will be best utilized by the team (for example, be assigned to assist a certain working group of students). Since postgraduates may not be able to attend all work sessions, the adult mentor will communicate with them to let them know what progress has been made and what the tasks for that work session will be.

Postgraduates should feel free to approach an adult mentor and ask them to handle any behavior or safety issues that they feel uncomfortable handling themselves.

Acceptance for travel will depend on the postgraduate fulfilling the role of mentor when they attend work sessions, and is not as dependent on hours they are able to attend. Postgraduates may be asked to contribute a portion of their travel expenses if they wish to travel with the team to regional competitions. The steering committee will have final determination on the ability of a postgraduate's ability to travel and the cost of that travel.

If proper safety or behavior standards are not maintained, the adult mentor will discuss this with the postgraduate immediately to correct the situation, and if needed, refer the issue to the Steering Committee for further action.

Adult Team Members:

Helping the students reach their full potential is the primary reason for participating in FIRST. We know that mentors have families, jobs, and other important commitments outside of the team. We ask that mentors properly inform us up front of how much time they think they will be able to contribute. All adult team members will be CORI checked per the schools rules. Adult chaperones on team outings are not allowed to consume alcoholic beverages. We also expect adult members to follow all the guidelines stated in this handbook.

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**2009-2010 Shrewsbury F.I.R.S.T. Robotics Team
Student Team Contract**

Full Name: _____

Participation in the F.I.R.S.T. Robotics Team will require a large commitment on your part. To be a part of the team you must:

- Keep up grades and attendance at school (no exceptions)
- Sell minimum of 10 pies. If a member joins the team after pie sales, that member is required to pay the cost of 10 pies to the team (\$120), due to the fact that pie sales go towards lowering team's travel expense. The more pies sold, lower travel fees will result, if any.
- Exhibit appropriate behavior at all times. This includes behavior within the classroom and school as well as at competitions or events.
- Complete and return all paperwork and make all payments in a timely manner.
- Participate with a positive attitude.
- Work a minimum of 72 **quality** hours to attend the Home competition, and 122 **quality** hours to attend the Away competition
- Attend a minimum of 10 team meetings. If you cannot attend a team meeting you need to speak with John Tsombakos. **Prior** to the meeting!
- Help in 20 shop clean-ups or otherwise equivalent work (must be agreed upon by mentors) and 3 dinner clean-ups.
- Follow **all** guidelines set forth in this handbook

If you or your family is unable to meet any of these requirements please speak with Nancy Donoghue or Raj Patel.

I have read the Shrewsbury F.I.R.S.T. Robotics Team Handbook. I understand that if I wish to attend any of the competitions, I will be required to earn that privilege by participation in the activities mentioned above.

Member Signature _____
Date _____

I have reviewed this handbook with my child and understand the commitment that will be required. I agree to have my child participate on the Shrewsbury F.I.R.S.T. Robotics Team.

By signing this contract parents are agreeing to retrieve their child should the need arise.

Parent/Guardian Signature _____
Date _____

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**2009-2010 Shrewsbury F.I.R.S.T. Robotics Team
Mentor / Post-Grad Team Contract**

Full Name: _____

Participation in the F.I.R.S.T. Robotics Team will require a large commitment on your part. To be a part of the team you must:

- Exhibit appropriate behavior at all times. This includes behavior within the school as well as at competitions or events.
- Complete and return all paperwork and make all payments in a timely manner.
- Participate with a positive attitude.
- No Alcoholic beverages will be consumed before or during team work sessions and events.
- Follow **all** guidelines set forth in this handbook
- Mentors are there to guide the student through the process of building the robot that the students have conceived and designed.

Failure to follow these guidelines will result in the Steering committee intervention and possible removal from the team.

I have read the Shrewsbury F.I.R.S.T. Robotics Team Handbook. I understand failure to follow these guidelines will result in the Steering committee intervention and possible removal from the team.

Member Signature _____

Date _____

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