

Gull Lake Area Robotics

FRC Team 4381

Twisted Devils



Handbook



What is FIRST? *FIRST* stands for "For Inspiration and Recognition of Science and Technology."

"*FIRST* is a program that uses the building of a remote-controlled robot to create interest in STEM (Science, Technology, Engineering, and Mathematics) careers. The program is based on the varsity sport model where robots, piloted by the students, compete 3 on 3 on the floor of an arena. Unlike other varsity sports, every student on a *FIRST* Robotics Competition team can turn pro.

The robots are built from a common set of components given to all participating teams. Teams of students work side by side with technical mentors from the industry to build their machines.

Each team plays in two district events across Michigan. The top 200 teams move on to attend the State Championships. The top 90 teams from the State Championship qualify to attend the World Championships (based on 2020).

Gracious Professionalism is part of the ethics 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.

What do we do? We design and build a really cool robot, to compete against other robots in a game that is different every year. It is more than just building a robot; our team operates like a small business. We have different "subteams", which are small groups that handle everything from marketing, fundraising, website design, electrical, programming, accounting and mechanical. There is a place for everyone on our team. It is more than just holding a wrench!

What's in it for you? The opportunity for hands on learning from people who do real life engineering and business management every day. *FIRST* offers over \$18 million of scholarship opportunities which are available for students who participate in *FIRST* robotics. Last year one in four students who applied for a scholarship received one.

Mission Statement

Team 4381 Mission Statement: Challenge the minds of students in the greater Gull Lake Area, to learn and appreciate the fields of science, technology, engineering, math and business through the participation with the US *FIRST* programs at all levels.

Team Expectations

Mentor Roles and Responsibilities

Commitment

Helping the students reach their full potential is the primary reason for participating in *FIRST*. We ask each mentor to properly inform us up front of how much time they think they will be able to contribute to the team. Involvement may include anything from preseason, build season, or fundraising.

Leadership

The leadership of this team is a cooperative effort between mentor and student leaders. Mentors are expected to help lead and guide the "subteams" with the students.

Student Leader

- Demonstrate and show core values always
- Need to be at 90% of meetings during the school year, and ability to come early or stay late if needed
- Able to attend community events
- Stay your sub-team at all time
- If you cannot make a meeting you need to text the captain through remind
- Report all incidents to the nearest mentor
- Robotics need to be a priority over other activities

Description of Leadership

Captain

- Represent in the team in all official capacities, including FIRST Competitions. Is the chief spokesperson for the team. Supervises all business and build activities
- Runs meetings
- Keep track of what needs to be done for build including monitoring of FIRST manuals
- Coordinate projects and communications with sub-team leaders
- Coordinate communications between the sub-teams
- In charge of Chairman's Committee and Business plan including the submission of required documentation to FIRST
- Communicate Coaches and Mentors about project status and needs.
- Need to have level 1 and 2 Leadership and Participation badge completed by September 1, 2019

Co-Captain(s)

- In the absence of the captain, the co-captain(s) will represent the team
- Run the meeting with captain
- Help the Team Captain as needed
- Help Team Captain with Business Plan and Chairman's Committee
- Communicate with Team Captain, Coaches and Mentors about project status and needs.
- Need to have level 1 and 2 Leadership and Participation badge completed by September 1, 2019
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Sub-Team Leaders

CAD

- Work safely. Promote and demonstrate safe practices.
- Coordinate top level CAD model of robot with all subsystems.
- Assign team members to develop sub systems.
- Assist team members to develop improved CAD and Design skills.
- Coordinate with Marketing Sub-Team Leader to design pit materials.
- Store and maintain designs for future reference.
- Maintain and monitor build schedule.
- Communicate with Team Captain, Coaches and Mentors about project status and needs.
- Need to have level 1 and 2 Leadership and Participation badge completed by September 1, 2019

Electrical

- Work safely. Promote and demonstrate safe practices.
- Assist team members to learn about and use tools properly.
- Lead construction of robot and be familiar with all systems on robot.
- Assign team members to subsystem development and construction.
- Work with Drive Team to troubleshoot and test robot.
- Maintain and monitor build schedule.
- Coordinate with Marketing Sub-Team Leader to build and assemble pit area materials.
- Communicate with Team Captain, Coaches and Mentors about project status and needs.
- Need to have level 1 and 2 Leadership and Participation badge completed by September 1, 2019

Marketing

- Work safely. Promote and demonstrate safe practices.
- Coordinate and supervise Team Identity based on goals and spirit of FIRST.
- Maintain outreach and communication with PPR, other teams and sponsors.
- Develop marketing materials and documents.
- Develop look and image plan for competition.
- Assign Marketing Team members to support outreach events.
- Keep electronic communication methods functional, current and up to date
- Maintain and monitor marketing schedule.
- Communicate with Team Captain, Coaches and Mentors about project status and needs.
- Need to have level 1 and 2 Leadership and Participation badge completed by September 1, 2019

Mechanical

- Work safely. Promote and demonstrate safe practices.
- Assist team members to learn about and use tools properly.
- Lead construction of robot and be familiar with all systems on robot.
- Assign team members to subsystem development and construction.
- Work with Drive Team to troubleshoot and test robot.
- Maintain and monitor build schedule.
- Coordinate with Marketing Sub-Team Leader to build and assemble pit area materials.
- Communicate with Team Captain, Coaches and Mentors about project status and needs.
- Need to have level 1 and 2 Leadership and Participation badge completed by September 1, 2019

Programming

- Work safely. Promote and demonstrate safe practices.
- Lead programming effort for robot
- Assign programming team members to sub system programming tasks.
- Store and maintain programs for future reference.
- Coordinate with Mechanical and Electrical teams to develop programs.
- Maintain and monitor programming schedule.
- Communicate with Team Captain, Coaches and Mentors about project status and needs
- Need to have level 1 and 2 Leadership and Participation badge completed by September 1, 2019

Safety

- Work safely. Promote and demonstrate safe practices.
- Plan, create, and present annual team safety seminar and supervise quizzes
- At competitions, represent Team to UL in position of Safety Captain
- At all competitions, monitor pit safety and proper tool use
- Buy safety glasses and other safety equipment, including fire extinguishers, as needed
- Monitor websites (FIRST, Chief Delphi) for vital information
- Coordinate safety of tools and oversee tools management.
- Download and print-out current year safety manual, including safety (MSDS) information about batteries. This information should be available in the workshop and at competitions as part of information shared with Judges and UL.
- In charge of Safety Animation Community
- Keep MSDS binder up to date
- Brainstorm new ideas for our safety program
- Maintain and monitoring safety schedule
- Communicate with Team Captain, Coaches and Mentors about team status and needs
- Need to have level 1 and 2 Safety badges completed by September 1, 2019

Strategy

- Work safely. Promote and demonstrate safe practices.
- Coordinate with programming team to collect and record competitor information.
- Provide competitive information to Drive Team during competition.
- In charge of creating our alliance selection list
- Communicate with Team Captain, Coaches and Mentors regarding competition status.

- Need to have level 1 and 2 Leadership and Participation badge completed by September 1, 2019

Jr. Mentors

FLL

- Demonstrate and show core values
- Act like you are in charge, be an adult
- You are not there to play with the robots, you are there to mentor
- You are there to guide the students not do it for them
- Assist in the learning process
- You will not be assigned to any specific team
- You will be assigned a task by Mr. English (ex. presentations, core value boards, project, programming, building a robot).
- You will not be expected to go to the competitions, but you are welcome to
- Help with practice competition
- Be familiar with the challenge
- Know the game rules
- Need to attend at least one meeting a week

FTC

- Demonstrate and show core values
- Act like you are in charge, be an adult
- Guide the students in the correct direction
- Be familiar with the game, know the rules
- Be the on-field coach for two regular season events
- Help with judge's interviews
- Take with your FTC team coach to see where you fit the best (ex. Programming, build, judge's interviews, etc.)
- Communicate with your team so they know what meetings you can attend
- Need to attend at least one meeting a week
- Get to know the students on the team

Parents/Guardians

Parents/guardians are an integral part of our team and important to our success. The robotics team becomes a family throughout the year because they spend a lot of time together.

Parent Requirements

- Provide timely transportation for their students to/from team meetings and events.
- Assist and support their student in fundraising and community service activities.
- Provide accurate medical information for their student and keeping the team leader informed of any changes.
- All parents are expected to help in some manner during the season whether it is supplying a meal, helping with travel arrangements or volunteering your time to help on the team.
- Every family is asked to bring at least one meal during build season. Mentors and students work very hard during this time and it is important for them to be well nourished. The mentors are providing their time and expertise on a volunteer basis- they are not paid. A tasty meal is a wonderful way to say "thank you" for all the hard work they do for your student.

Safety

- Always wear safety glasses at all times when working on the robot, in the machine shop, and at competitions.
- Wear side guards if you wear prescription glasses.
- Abide by the safety procedures of all machines in the machine shop. Always know how to use machines before operating them.
- Wear proper gear to protect against heat, electricity, and of other hazards.
- Always wear closed toe shoes. Flip flops, sandals, crocs, and any other opened toe shoes are not allowed in the machine shop or in the pits at competition.
- Do not wear loose clothing or accessories such as jewelry, ties, or keys chains. They are not to be worn while working with machinery.
- Long hair must be tied back or covered.
- Students will be under supervision at all times while working machines (this includes when turning on and shutting off the machine.)
- Machines cannot be operated without permission of mentors.
- Be careful when moving long pieces of material so that nothing or no one is hit or injured.
- Know the location of all safety equipment, first aid kits, eye washing station, etc.
- All injuries (small or big) **must** be reported to mentors or safety team member as soon as possible.
- Insulate all electronic connections to prevent arcing.
- Don't run in the shop, pits, or playing field.
- Always use teamwork when lifting heavy items. Follow proper lifting techniques: lift with the knees, not the back.
- Yell "hands clear" when the robot is powered up.
- Power down robot when working on any component on the robot. Disconnect power source before servicing any item.
- Always plug battery terminals.
- Never pick up batteries by the cords.
- Keep sharp objects pointed away from other people

Student Expectations

Students on Team 4381 should be actively involved with the team. Depending on school and extracurricular schedules, some students may be able to participate more than others. The level of participation that a student gives determines whether you are on the travel team during competition season. Students will put priority on their grades over any team need. **Grades are important.**

Code of Conduct

1. Students will display "Gracious Professionalism" always and promote the ideals of *FIRST*.
2. Students will abide by the GLHS Student Code of Conduct always.
3. Students are expected to behave in a courteous and cooperative manner.
4. Students are expected to be respectful of others and behave in a way that protects the health and safety of themselves and others.
5. Students shall be respectful of the facilities, tools, equipment, and all things being used by the team.
6. Students shall not use profane, obscene or vulgar language.
7. Students visiting or working at corporate sites are guests of the corporation and must be courteous and respectful. While at a corporate site, students are expected to follow the general and safety rules posted at the site.
8. Students are expected to keep current with team activities and requirements by checking the website and their email frequently.
9. Students are expected to show up **on time**.
10. Electronic devices are only allowed with prior permission from a mentor.
11. Students must help clean up after each meeting.

Travel Team

To be eligible to be on the travel team students:

1. Must attend 80% of team meetings (Oct-March), chairman and safety committee meetings count as bonus meetings
2. Must complete their volunteer/community outreach obligations. Existing members need to complete 20 hours of volunteer/ community service and new members need to complete 8 hours. Half of the student's volunteer/community service hours must be completed at team sponsored events (parades, demonstrations, Blue Devils Bash, mentoring FTC and FLL robotics teams).
3. Must complete "Twisted Devils Basic Training" by due dates assigned. (new Students 1 badge point, returning student 3 badge point)
4. Must turn in permission to miss class form, any other required paperwork and pay the required fees including the annual membership dues and travel fees.
5. Are expected to maintain a minimum of a C-average
6. Are expected to be reliable: on-time, prepared to work, clean up, positive attitude, assist newer members, responsive to mentors and other adult volunteers.

Travel Rules

The team has very strict rules when we are travelling. You are representing your school, your team and yourself. Depending on the severity of the violation, it may result in one warning. The next violation could result in the student not being allowed to travel with the team to competitions for the rest of the season and the possibility of being sent home from the current competition.

- Students must be sign in and out by designated adult when leaving the group. Parent sign in/out is required when leaving an event.
- Students of the opposite sex are not allowed in each other's hotel room.
- Students must be in their hotel room by 11:00pm and lights out at midnight.

Competition Rules

In the stands students can do the following things if our team is **not** on the playing field and their assigned task is completed:

- Read a book
- Free Time
- No electronics, phones or games allowed except before qualification matches start and during lunch break. Students will be allowed to check matches on their phones during the competition. We will be confiscating items if not used at the appropriate times.

Students are responsible for keeping track of time to make sure they are back on time to do their assigned task. Mentors will not come to find you. If you are not back in time to do you assigned task you will **NOT** be eligible to travel with the team in the future and maybe sent home from the current competition. It takes everyone doing their jobs to make this team successful!

Prohibited behaviors during all FIRST related activities:

- Inappropriate language toward adult and student team members
- Disrespecting any mentor, student or parent
- Disruptive or inappropriate conduct
- Arriving late for group activities and travel
- Inappropriate dress/attire (revealing or sexually suggestive clothing, clothing that has any reference to alcohol, drugs, sex or weapons)
- Noncompliance with curfew and bed check rules
- Leaving premises or assigned hotel rooms without permission from adult team member
- No harassment of any type, including sexual, gender-based, or ethnic slurs.

- No vandalism of any type at school, hotels, and venues or at any FIRST related location
- Using, possessing, selling or being under the influence of all illegal drugs, controlled substances, alcoholic beverages, or tobacco products (Violations of drug, alcohol and tobacco rules will result in immediate travel home, at parents' expense.)

Fundraising and Financials

Funding for Team 4381 comes from these sources:

1. Corporate and Educational Sponsors
2. Team member registration fees
3. Fundraising

Annual Team Budget

Competition Registration Fees

• District Events	\$	6,000.00
• State Championship		4,000.00
• World Championship		5,000.00

Raw Materials & Tool

• Robot Parts & Material	12,000.00
• Materials for Practice Field	500.00
• Tools for Construction	300.00

Expenses

• Office Supplies	550.00
• Team Uniforms	250.00
• Insurance	900.00
• Safety Supplies	250.00
• Website	175.00
• Uniforms	250.00
• Tools	300.00
• Team Building	650.00

Total \$ 31,125.00

Communications and Resources

Team website: www.team4381.com

Team Contact: Alan Thornton

Alan@springfieldmachine.com Work:

(269) 968-8223

Mobile: (269) 209-5210

www.firstinspires.org

- official website of *FIRST* robotics
- Information on *FIRST*
- Information about *FIRST* Robotics Competition
- Information on Scholarships opportunities
- Competition

FRC Team 4381 Twisted Devils

Student Information:

Name: _____ Grade: _____ T Shirt Size _____

Address: _____

Email: _____

Home #: _____ Cell #: _____

Parent/Guardian Information:

Name: _____ Name : _____

Work #: _____ Work # _____

Cell #: _____ Cell #: _____

Email Address: _____ Email Address: _____

Interested in helping on the Team? YES or NO

_____ I have enclosed the \$125.00 registration fee (includes two t-shirt) Please make checks made payable to Gull Lake Area Robotics. Please return this form and check by October 24, 2019 to the coach. Financial assistance is available. Please email brief explanation of your situation with how much of the membership dues you can afford.

_____ Students in 8th Grade and students doing the 5th year program are not required to pay the \$125.00 registration fee. They are responsible for purchasing their own team t-shirts.

_____ I am willing to help sponsor a student.

Violating Our Code of Conduct:

First Offense: Verbal Warning
Second Offense: Written Warning
Third Offense: Team Suspension
Fourth Offense: Cut from the Team

***Depending on the severity of the violation a student may be immediately removed from the team.

I agree that I understand the information presented in the Team Handbook and understand the requirements outlined in this code of conduct. I understand that I must always act responsibly and respectfully, and that schoolwork comes before teamwork. I must maintain good academic standing in order to remain on the team.

Student Signature: _____ Date: _____

Parents/Guardians

I understand that my student has chosen to be an active part of this team, and that while any level of participation is encouraged, my student must meet the team requirements to participate in team travel. I also understand that I am part of those requirements and agree to attend the parent information meeting, at least one team activity, and provide at least one meal for the team during the build season. I understand that parents can be a vital part of the team and are a big help in getting many of the team activities accomplished. I will do my best to support my student and the team in this endeavor.

Parent Signature: _____ Date: _____

Twisted Devils, FRC Team 4381

Health, Safety, and Liability/Medical Release Form

Student Name _____ Birth date ____/____/____

Allergies _____

Current Medications _____

Other medical conditions _____

Medical Insurance Company _____

Policy holder _____ Policy number _____

Student’s primary physician _____ Phone # _____

Student’s dentist _____ Phone # _____

Consent for Medical Treatment

I, the parent/legal guardian of above student, do hereby release, discharge and/or otherwise indemnify the Gull Lake Robotics Team and its mentors, students, and volunteers, Springfield Machine & Tool and the Gull Lake Community Schools, against any claim by or on behalf of the student as a result of the student’s participation on the team and/or being transported to or from the same, which transportation I hereby authorize.

Parent/Guardian Agreement

As the parent/legal guardian of above student participating on the Gull Lake Robotics Team, I hereby give my consent for emergency medical care prescribed by a duly licensed Doctor of Medicine or Dentistry. This care may be given under whatever conditions are necessary to preserve the life, limb, or well-being of my dependent.

Parent/Legal Guardian (Please Print) _____ Phone # _____

Parent Signature _____ Date: ____/____/____

Emergency Contact (Please Print) _____ Phone # _____



Media Consent

I, _____, parent of _____ do hereby give my permission to include photos/videos of my child in publicity for the Gull Lake Robotics FIRST Team 4381, including the team’s website and in other printed and electronic materials.

Parent signature: _____ Date: ____/____/____