
Team 971

FIRST Team 971 is formed of a partnership between students and adult mentors. The team is structured so that students can learn real-life engineering, business, and life skills by working side-by-side with adult mentors. Students are encouraged and expected to take on responsible tasks. Our goal is to build a sustainable team that provides an enriching experience for students and mentors, grows to be a world class team, and has a lot of fun doing so!

Commitment

We have found that in order to be a full contributing member of the robotics team, a member needs to commit to a minimum level of attendance. While there is no specific attendance requirement for participating in team meetings and helping on the team, students who do not meet the minimum time commitment will find it difficult to be involved on more than the most basic level. This is a team just like a sports team and commitment and practice is necessary for success.

Off Season participation: The off season is the time during the school year after the competitions are over in April until before the first weekend in January, including the summer. New members should attend at least one meeting a week during the off season so that they can learn how the team works and how to use the many tools that the team owns - hand tools, power tools, and computer aided design (CAD) software. Some students take the summer off, which is fine, and others learn a lot from their time invested during the summer. Spending more time learning in the off season will make members, both new and returning, more prepared for the season. Once the season starts in January, there is much less time for training.

Competition season participation: The competition season runs from January through April and we meet five days a week with a leadership meeting on a sixth day. During this season a minimum of two meetings a week, with at least one of those being on a weekend, is required to be a full participating member of the team. We also meet and work on the robots during

school breaks - especially during the winter break before the stop build date. Returning members often schedule family trips around these dates because a lot of fun and exciting work is done during that time.

The team does a lot of work and designing on the weekends when there is more time and there are more mentor resources available. Because of the short design and build timeline, time critical projects will be worked on throughout the week and weekend. A project started on a Wednesday evening during the competition season may have completely changed or be finished by the next Wednesday evening. Members who want to see their projects through to completion need to show up to several meetings a week. Some students and mentors work late into the evenings on weekends as we get closer to our deadlines, and the more students who are committed to help, when they can, on the weekends will allow us to get more done on the robot and increase our odds of performing well. Students who spend a lot of time on robotics also find that their time spent is more fun and rewarding.

Leadership: Students who commit to being leaders on the team find it to be very rewarding. Team leadership often spends time outside team meetings working on their leadership tasks, and this extra commitment should be understood and taken into account when stepping into leadership roles. The leadership council works to make sure that students can be successful as leaders and still do well in school.

Because a high level of commitment from team members is required to learn how to contribute and perform well as a team, students who do not make a minimum commitment (two meetings per week, including a weekend meeting during the competition season) will not be excused from school to attend competitions. All students may attend competitions during the hours after school and are encouraged to do so. All students are welcome to help during the competition.

Agreement

All team members and mentors must agree to and sign the Team Member Contract. It is repeated here.

As part of my commitment to FIRST Team 971 I agree to the following:

Leadership

I understand that the Leadership Council has final authority over all matters related to the team. I understand that leadership meetings are open, and that if I have an opinion I should bring it to the attention of the leadership for consideration.

Gracious Professionalism

I agree to practice Gracious Professionalism in all my interactions with other team members, mentors, parents, and other teams.

Commitment

I agree to take an active part in the team. I agree to work hard, show up at meetings, be willing to learn, and be open to new ideas.

I commit to good attendance and punctuality. Absences and tardiness may result in loss of team privileges. I agree to notify the team leadership in advance if unforeseen circumstances prevent me from meeting this commitment.

Expectations

I understand that the team expects me to contribute at the highest level of my ability, and that in order to be an involved member of the team I understand that I need to make a commitment to spend a minimum amount of time at meetings. If at any time I have a problem meeting team expectations, I agree to discuss with the team leadership in order to resolve the situation and ensure that both the team and I are benefiting from the relationship.

I agree to discuss my expectations for my involvement in the team with the team leadership. If at any time during the season I am having a problem with another team member or with the team, I agree to bring this to the attention of the leadership.

I understand that there are many skills required for a successful robotics team. I agree to work with the team leadership and the mentors to find a position that I find fulfilling and fun.

Safety

I agree to comply with all safety rules posted by the team leadership without exception. Safety is everyone's first priority, and everyone needs to be looking out for potentially unsafe situations. Unsafe situations must be reported to adult leaders. Repeated unsafe behavior will result in dismissal from the team.

Rules and Expectations

Leadership

- The Leadership Council is made up of elected students and mentors that govern the team. They play a large role in running the team and work closely with the Club Advisor, Wyn Schuh. She is the School Employee in charge of the team. Every effort is made to make decisions by consensus, but the Club Advisor has veto power over any decision. The club advisor is authorized to recruit and empower willing students and adults to perform various functions on the team.
 - Austin Schuh is the lead technical mentor and has final say over all design (hardware, software, electrical, etc.) and manufacturing.
 - Michael Schuh has authority over all safety issues.
- Expectations for projects and events need to be clear upfront. This includes having a schedule, deadlines, and a budget.
- For trips and events, someone has to agree to be in charge and make the event/trip happen. They take care of all of the details before the team commits to going. We need a written plan for each event/trip. Here are some things to cover (not a complete list):
 - Who is going?
 - What time do we want to be there?
 - Where and when are we meeting at the event?
 - What gear do we want to take? Any spare parts, how many batteries, chargers, etc.
 - When is the gear going to be packed - need a key and supervision to be on campus?
 - How is the gear going to be transported?
 - Do we need to bring food, or is there food available there?

- What time will we return?
- When will the gear be returned to the lab?
- How is everyone getting there? Does anyone need a ride?
- Is there adequate supervision to satisfy MVHS rules?
- If lodging and/or air travel is needed, then who is going to take care of this?
What is the lodging/travel plan?

General

All team members (students and mentors) are expected to follow the rules listed below. For the benefit of the team, violations can result in loss of privileges and removal from the team.

- **All safety rules need to be followed.**
- **Kick-off day:** All team members will watch the kick-off video and hear what Woody and Dean have to say. This helps set a common set of expectations on our team and throughout FIRST.
- **Be respectful in all conversations and group discussions.**
 - Listen to other people when they are talking.
 - Only one person talks at a time.
 - The discussion must not be dominated by any one person.
 - If your ideas are repeatedly not being embraced, listen to why this is, and stop presenting ideas until you learn from listening to others what does work for the team.
 - Discussions, while they may be spirited, are based on the content of ideas and opinions, not on personalities.
 - If there is a difference in opinion, work together to resolve the dispute, solve a problem, create a plan, make a decision, find principles all can agree on, or come to a conclusion from which it can move on to further discussion.
- **Safety glasses** are to be worn when required.
- **To use tools in the lab**, students and mentors must
 - Have agreed to and signed the Team Contract.
 - Have signed the consent and liability release form.
 - Have their emergency contact information on the list in the lab.
 - Pass the safety test and have their name on the "Passed the Safety Test" list.
 - Pass the safety training and have their name on the "Passed the Safety Training" list for the tools. Separate training is provided for hand tools, simple power tools, and the larger tools.

- Non team members are not allowed to use the tools.
- If you are not willing to put tools away and clean up your workspace when you are done, don't use the tools or the workspace.
- **Work in a clean environment** - put tools away after using them. A clean and organized workspace is a more productive place to work, and fewer things get lost. Pick up every day. Clean the floors if needed. Stop during the middle of a work meeting and clean up if needed. If mentors are cleaning, stop and help them or do it for them. If asked, stop whatever you are doing and clean up. Show up and actively participate in lab cleanup and organization meetings.
- **Subversion** is used to store and share the team documents such as CAD, software, and T-Shirt designs. It is run on a small server and has limited storage. Once a file is added, it cannot be removed from the database. When in doubt, ask Brian, Austin, or Michael before committing a file.
- **Purchasing**
 - The Leadership Council is responsible for approving purchases with team funds. They delegate some purchasing to specific people to enable faster responses.
 - If you make a purchase without approval from the Leadership Council or their delegates, don't expect to be reimbursed.
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- The team controls access to **photos, videos, designs, and documentation** to maintain our competitive advantage. Do not share any photos, videos, designs, or documentation outside of the team (this includes but is not limited to posts to Chief Delphi, a FIRST robotics forum) without approval by the team leadership council. Example, do not post any pictures of our robot on Chief Delphi that were not taken at a competition without team leadership council approval. And even with approval, do not post pictures or videos of our robot that contain any other team's robot taken outside of competition events (for example, practice sessions at NASA). You can, however, send photos or videos to people on the team private Google group or blog.
- Classroom doors are fire doors and need to be kept shut when we are not working in the room, we are away from the room for more than 15 minutes, and at the end of the day.
- The walkway in the lab area is to be kept clear. Move the cutoff saw, chairs, and other obstacles out of the way and close the cabinet doors.
- Prevent trip hazards by not stringing wires, power cords, and other things across walkways.
- Prevent slip and fall hazards by keep the walkways and floors clear and dry.
- Broken and lost tools need to be replaced. Put them on the purchase list with a comment about how they were broken or lost.
- Tool sets like the Allen wrenches and PWM kits need to be kept together. If you are not willing to keep them together, don't use them.

- If you dig through a cabinet for something, leave it organized and put away before walking away from it.
 - The travel tool sets and bins are to be used for travel activities and events. They were created so that we would have what we need when we are away from the lab, and because we were spending huge amounts of time preparing for trips and ending up without the correct gear. Do not use any of the tools or supplies in the travel tool sets or bins without asking Michael first. It is very frustrating to find tools missing when you need them because someone “needed” them in the lab and did not put them away. It is very hard to keep them stocked if people are taking things out without replacing them. If you use supplies from the travel gear or find tools missing or needed, replace them.
 - Everyone needs to pitch in and help with packing for trips and events to make sure we have the correct gear and supplies. This especially means the main team contributors, because they know what the key components are for the robot.
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Drive Team

The drive team is the subteam that includes the driver, manipulator, coach (typically a seasoned mentor), and human player. Being on the drive team is the icing on the cake rather than the main meal. Students that significantly contribute to the team in terms of management, design, building, programming, and such will be given preference for being on the drive team. Students in any grade are encouraged to be active contributors to the team in all areas, including being on the drive team. Students interested in being on the drive team are encouraged to talk to the mentors and students organizing the drive team if they have questions or need more information. The 971 team fields high performing robots and works hard to field high performing drive teams to drive the robots to victory.

Drive team members are expected to:

- Attend all days of all of the competitions during the regular competition season - Sacramento (Davis), SVR, and Championship (partial scholarships are available for those that need help with finances). Drive team members must be there for all matches, including delayed matches that take place after the event was scheduled to end. For example, someone is in the band and there is a band event they are expected to attend in the evening, after a competition. If the competition runs late, the band member will stay for the last match and take the heat from the band leader for being late.
- Show up for all of the practices. We can work with people who have a few commitments, but people that have their weekends booked and most week nights booked with other commitments will have a difficult time being on the drive team.
- Be on time for all practices, meetings, and competitions. At the competitions, drive team members will be responsible for getting the robot and themselves ready and queued for matches.
- Read and respond as necessary to drive team emails and team emails in a timely manner.

- Work closely with, and respond quickly and positively to, the mentors and students leading the drive team.
- Be committed to excellence in being the best they can at their position. For example, if a mentor coach tells them to work on a particular driving skill, they will work on that skill and do their best to understand what the mentor is coaching them to do and learn to it.
- Read all of the competition rules and updates. They need to be intimately familiar with the scoring and penalty rules.
- Avoid damaging the robot. For example, if the mentors say it will likely damage the robot to drive fast over a bump, the driver will respect that and not do it.
- Be respectful to all teams and be a good sport. For example, help an opponent whose robot needs repair, rather than laughing at them. It is OK to celebrate winning. It is good to congratulate our opponents for a good competition and complement the good aspects of their robot and driving. Boasting is prohibited. Avoid damaging opponent's robots.
- Work on designing, building, programming, and fielding the robot. Actively help pull gear together for practices and competitions, and be active in keeping it running and in top condition. Drive team members are key members of the pit crew that keep the robot in competition condition.
- Be ready for competitions by getting enough sleep (6 hours is not enough, 8 or more is what we are expecting) for several days before and during the competition so they are well rested and able to perform their best. At the competitions, they will go to bed by 10 pm each night before they compete.
- Good school grades and citizenship must be maintained.
- Mentors have final say who is on the drive team and will involve student leaders as is appropriate.

They must understand that:

- It is a privilege to be on the drive team.
- Good drive team members are like test pilots, highly skilled and able to communicate what they saw and how the robot behaved to the drive team leaders and coaches.
- Competitions are intense and not everyone performs as well under competition pressures as they do at practices. Plenty of sleep and food help with this.
- They must always be on their best behavior as they are very visible members of our team.
- Drive team members who have performed well in past competitions will have a great chance of being selected to be on the drive team again. If time is short, they will likely be chosen without any driver tryouts.
- Everyone wants the drive team and team members to succeed.

Drive Team Selection Process:

Drive team selection is a process that happens every year. If you are interested in being on the drive team, first start by reading and understanding the drive team section of these rules.

The competition drive team is selected at the end of the build season. Selection is based on more than just driving skill, and includes consideration of students' involvement and interactions on the team throughout the year. Students need to demonstrate involvement on the team outside of drive practices

if they would like to be considered seriously for drive team selection. The selected drive team is responsible for preparing for and competing in all in season and off season competitions for that season year. This selection is nominally re-done on an annual basis.

Our expectation is that the drive team is consistent throughout this duration, but there are exceptions where this may not be the case. The drive team is expected to operate according to the drive team expectations, and members will be removed if they are not following these expectations. Also, being on the drive team is not for everyone. Sometimes it becomes clear to the mentors that someone else will serve the team better, and in these cases drive team members will be replaced.

We do not hold tryouts during the build season. Instead, we base driving skill assessments off of off-season competition and practice performance. The team takes three robots to the Madtown Throwdown in November, which allows us to select two additional drive teams for this event. Also, the drive team for the competition robot sometimes has students graduate. When this happens, we hold an additional selection process to backfill those positions before our first off-season. We hold multiple open drive practices leading up to the selection of these drive teams in order to give everyone a chance to gain experience driving the robots.

Our general process for off season drive team member selection is as follows. We start with open drive practices to give everyone a chance to learn. We then have an open tryout where everyone trying out performs some task. We may or may not have multiple phases of narrowing, where extra consideration is given to a subset of candidates. The amount of time spent in each phase depends on how much time is available, and how much time is judged by the mentors to be appropriate. This selection process for the additional Madtown Throwdown drive teams usually starts with open practices in the summer and finishes in October.

For Madtown, members of the competition robot drive team may be interested in trying other roles within the drive team. They are welcomed to try out for these roles. If they are selected for a different role, their position with the competition robot will be backfilled through the same selection process.

Selection for the 3rd robot drive team is more heavily weighted towards involvement during the design, manufacturing, programming, and assembly of the 3rd robot, over involvement throughout the rest of the year. The 3rd robot drive team is not selected until after the 3rd robot is ready for drive practice, and the selection process may be compacted based on how much time is available.