Westwood Robotics Handbook

1. Introduction

Welcome to Westwood Robotics! Our mission is to inspire young people to become leaders in science, technology, art, engineering, and mathematics by engaging them in team-based programs that build important technical and life skills such as leadership, innovation, communication, and self-confidence. We hope that you will have a great time on the team while learning skills that you will carry on into your future career.

Westwood Robotics is the umbrella term that refers to the collective activities of the team and the nonprofit organization, Westwood Robotics Inc., throughout the community. The full name of the high school team is the "Westwood High School Robotics Team" and "WHS Robotics". In the *FIRST*® Robotics Competition, the team name is "Wolverines" and the team number is #1757.

History

- 2006: The team was founded. Awarded the Highest Rookie Seed award.
- 2017: Competed in the New England District Championship

Team Leadership

Westwood Robotics is run by dedicated leaders consisting of student leaders, mentors, and faculty advisors. Any high-level questions, comments, or concerns should be directed to these individuals.

- Faculty Advisor - Jim Looney - jlooney@westwood.k12.ma.us
- Faculty Advisor - Raul Madera - rmadera@westwood.k12.ma.us
- Lead Mentor - Chris Aloisio - chris.aloisio@gmail.com
- Lead Mentor - Dwight Meglan - dmeglan@gmail.com

- Captain/President - Cortina Barbieri - cortina@whsrobotics.org
- Vice-Captain - Sean Lendrum - sean@whsrobotics.org
- Secretary - Lizzy Collins - lizzy@whsrobotics.org
- Treasurer - Grace Tseng - 22gtseng@wpsstudents.org

Westwood Robotics, Inc.

Westwood Robotics, Inc. is the financial and community-facing 501(c)(3) non-profit organization supporting the WHS Robotics Team. Westwood Robotics, Inc. is not affiliated with WHS, Westwood Public Schools, *FIRST*, or NE *FIRST*. The contents of this handbook do not necessarily reflect or fully follow the policies and bylaws of the organization.

2. *FIRST*® and NE *FIRST*® and *FIRST*® Robotics Competition

FIRST (For Inspiration and Recognition of Science and Technology) is an organization founded in New Hampshire in 1989 by Dean Kamen and others to inspire and support students in learning science and technology through a series of mentor-based programs. NE *FIRST*® is the operational partner of the *FIRST* Robotics Competition in New England, supported by ingenuityNE.

FIRST Robotics Competition is the "ultimate Sport for the Mind." Combining the teamwork of sport and the challenges of science and technology, high-school students work closely with mentors and professionals to design, build, and program robots in an intense six-week time limit.

Learn more about *FIRST* at https://www.firstinspires.org/.

Gracious Professionalism® and Coopertition®

Gracious Professionalism® is one of the biggest core values of *FIRST*. It encourages high-quality work, emphasizes the value of others, and respects individuals and the community at-large. Coopertition® is about striving to display kindness and respect to others even in fierce competitions. The large community of *FIRST* teams help and cooperate with each other all over the world.

3. Timeline

- **Preseason** – From the beginning of the school year to the day before *FIRST*® Kickoff. We teach and prepare new members with lessons and tools, fundraise, and do outreach.
- **Build Season** – From the first Saturday of January or *FIRST*® Kickoff, whichever comes first, to FRC Stop Build Day (Late February). Build sessions are scheduled throughout the build season and it is very important to show up regularly.
- **Competition Season** – (March-May) From FRC Stop Build Day to the end of World Championships.
- **Postseason** – After World Championships to the beginning of the next school year, we elect new officers, clean up the facility, have our end-of-year banquet, discuss potential ways to improve, and give demos and outreach programs.

4. Joining the Team

Students

Membership is open to all students attending Westwood High School. Students may apply through the team's website or on any official registration form at outreach events such as the annual Student Activities Fair. Registration closes in the beginning of October. Late applicants may still be able to apply on a case-by-case basis.

Members from previous years must also apply each year to maintain a stable list of participants. Students wishing to apply for certain leadership positions must submit a written application which will be reviewed by an application panel and/or current team leadership.

Eligibility for attending overnight events is based on a number of various factors. These may include a member's participation and contributions over the year(s). All members are encouraged to attend local events.

Mentors

Mentors are crucial to the operation of our team. We welcome all parents and adults who are interested in dedicating some of their time as technical mentors or non-technical mentors.

All mentors and adult volunteers must undergo a mandatory Criminal Offender Record Information (CORI) check provided by Westwood High School and the Westwood Police Department prior to working extensively with the team. To begin the process, please email a member of Team Leadership or sign up on our website.

5. Team Information

Communication and Organizational Tools

- **Slack** – A communication service for the entire team. It has different channels for individual sub-teams and projects, people can talk to others individually, and call individually or in a group. Slack also provides a feature known as video calls where we occasionally hold online meetings.
- **Website** – Our website displays all the current and past information of the team. We promote the team, events, media, robots, and sponsors throughout the site. There is an official calendar for the team at the bottom of the homepage.
- **G Suite** – Using a whsrobotics.org provided email to communicate with people outside of the team such as sponsors/businesses, other teams, and the community at-large is preferred. Internal team communication or communication with teachers or the school is flexible.
- **Email** – Team leaders will send out emails about important information. This includes: important meetings, reminders, forms, documents, and other important information that needs to be shared. Reading these emails promptly is mandatory.
- **Classroom** - All subteam leaders will be added to a Westwood Robotics Google Classroom where they can access files, documents, forms, etc. to distribute/share with their subteam if necessary.
- **Blog** – Our team has a blog at https://blog.whsrobotics.org where we put updates and information about events and our team.

- **Trello** – A website where we organize our to-do lists. Trello gives us the ability to assign, categorize, and prioritize tasks to different people and mark tasks according to completion.
- **Google Drive** – We store all documents, media, and other important resources across our Team Drives. You must have a Google account to view the files; if you don't have an account, we can provide you one upon request.

Events

- Outreach Events
  - Westwood Day
  - Open House
  - Middle School Demo
  - Elementary School Minicourse
- FRC Events
  - *FIRST*® Kickoff
  - Local District Events
  - New England District Championship (if qualified)
  - World Championship – Detroit (if qualified)

Not all events are mandatory to attend, but for competitions, we ask that you stay for the entire duration of the event if you attend. All members are expected to assist with scouting, operations, and/or other business sub-teams during competitions. Please wear team apparel if available.

Financial Responsibility and Aid

Participation on the team is free. If cost for event lodging, food, or apparel is an issue, please contact a faculty advisor.

Food

Food and snacks are sometimes provided during meetings, build sessions, and competitions depending on the team's budget and finances. We try our best to honor allergies, so please let us know if you have any. Please help contribute by bringing in snacks and/or drinks to share with the team.

Forms

FIRST Consent and Release forms acknowledge your safety and liability at various events. You must create an account and have a parent/guardian create one too, so that you can accept the form. **These are required prior to attending any *FIRST* event.**

Fundraising

Funding for the team primarily comes from corporate donations, grants, and individual donors. Team members are expected to help with the fundraising process. All monetary donations are tax-deductible to the fullest extent of the law. The W-9 form and the IRS Letter of Determination are considered confidential but releasable to corporations who are looking to donate; these documents are available upon request. Checks should be written out to "Westwood Robotics Inc." and a proof of donation is available upon request.

Leaders

Team Leadership positions come with volunteer requirements at the nonprofit organization level. Each sub-team has a knowledgeable leader who is responsible for that sub-team's activities. Leaders organize, plan, and direct goals for sub-teams to accomplish.

Leaders are chosen by Team Leadership either at the end or the beginning of the school year or as needed. Interested members must be able to demonstrate apt skills and experience regarding their sub-team.

Meetings

Team Meetings usually occur immediately after-school on Early Release Wednesdays (12:45 PM). Full-team meetings with students and mentors may occasionally take place Wednesday evenings or on the weekends. Sub-team leaders may choose to hold additional meetings outside of regularly scheduled meetings. Email the secretary if you would like to schedule an additional meeting.

Mandatory meetings may be scheduled throughout the year as needed. Members will be notified with plenty of time beforehand. If you cannot attend a mandatory meeting, please notify the secretary immediately. Meeting dates and times will be posted on our website's calendar.

Links

- Website https://whsrobotics.org
- Mail https://mail.whsrobotics.org
- Slack https://slack.whsrobotics.org
- Trello https://trello.com/wwrobotics1757
- Blog https://blog.whsrobotics.org
- Twitter https://twitter.com/WWRobotics1757
- Instagram https://www.instagram.com/wwrobotics1757
- Github https://github.com/1757WestwoodRobotics

Permission Slips

Westwood High School requires that students who miss school or drive for school-approved events fill out various permission slips later on in the year. A student's ability to attend events during school hours is subject to the policies set forth in the WHS Student Handbook and approval from the faculty advisor prior to departure.

6. Sub-teams

Sub-teams are divided into two groups, business and technical. **All students must participate in at least a single business sub-team.** This allows us to function as a complete team. Work assigned by these sub-teams must be done with consideration and effort.

Business

Administration

Responsible for managing the general operations of the team. This includes sending emails, scheduling locations, managing team roster, managing google administration (forms/documents etc.).

Finance

Members will maintain a budget and keep track of all our purchases and produce financial reports. Members will lead sponsorship applications and other fundraising activities.

Graphic Design

Responsible for designing team awards, team apparel, merchandise, sponsor decals, and publicity materials including banners, flyers, posters, handouts, and displays. They are also responsible for creating and maintaining the team's identity standards in official documents and displays.

Outreach

Members of this sub-team will plan and execute programs and events in our community. Mentoring FLL or STEM teams, volunteering at robotics events, providing support to other teams, and other related activities are considered outreach efforts.

Awards

Plan, collaborate, organize, develop, and present the Chairman's Award essay and video presentation. Fulfill requirements to win other awards offered by *FIRST*® and other organizations.

Public Relations and Media

Members will engage our audiences and maintain our team image through social media such as Twitter, Instagram, and our blog. Members will take photos and videos of our events, robots, and the team.

Web

Web developers will maintain the team's website, keeping it up to date. This include updating the list of sponsors, uploading information and content of robots or events or resources, and adding new features. This also includes developing web/mobile apps to assist other sub-teams or tasks.

Technical

Mechanical

Members are involved with fabricating parts, assembling the robot, and using tools. Additionally, this team will construct the field elements for the current season's game challenge.

Design

Design includes Computer Aided Design (CAD), robot sketches, and guiding the overall aesthetic of the robot.

Electrical

Members of the Electrical sub-team wire the robot and work with electrical components, wires, sensors, and connectors.

Controls

Controls is responsible for designing and assembling the system for controlling each robot. Involves a basic knowledge of computers, design, electronics, networking, and programming.

Pneumatics

This sub-team works with pneumatic (air) components such as compressors, pistons, air tanks, cylinders, and tubing.

Programming

Programmers will use some variety of languages and tools such as Java, Python, C, HTML, CSS, JavaScript, Git, and Terminal. Small hardware and electronics projects may be involved.

Vision

The Vision team works with cameras to process images and video. Detecting objects, applying filters, and processing streams over the network are some of the activities.

7. Expectations

Community Service

It is part of our mission to give back to our community. Eligible service hours at community events or mentoring can also be recorded with the National Honor Society for seniors or qualify for various honorable service awards such as the President's Volunteer Service Award.

Facilities

The Westwood High School Project Lab is our main facility. We have a corner of the room dedicated to the robotics team. The following rules apply to all rooms that we use throughout the school.

- Return tools and parts properly at the end of the day
- No eating or drinking near the computers, robots, or electronics.
- Return chairs/stools to where they belong
- Erase the whiteboard after using it
- Wipe down any tables that are dirty
- Pick up trash and clean up the floor

Room reservations (including meetings) outside of normal school hours should be scheduled with at least a week's prior notice directed to the secretary.

Safety

Safety is the highest priority for all our members. Please report any unsafe practices or behavior immediately to Team Leadership. Adequate personal protective equipment (PPE) is mandatory and may include protective apparel, safety glasses (impact rated), gloves, air masks, and ear plugs/muffs.

- In the case of a fire, turn off all machinery, unplug all equipment, and evacuate immediately. If the fire is in the project lab, the closest fire extinguisher is in the hallway.
- Do not use power tools or other dangerous equipment without permission, adult supervision (in most cases), adequate PPE, or proper training
- Ask a mentor if you are unsure of how to properly and safely use a power tool
- If a tool or piece of equipment breaks, report it to a mentor or a team leader immediately
- No horseplay or improper usage of tools or equipment will be tolerated

There is a safety team to ensure that the team is operating in a safe manner. Duties include:

- Safety Training – teaching other team members how to safely use the tools and materials in the lab
- Certification – certifying that people have the requisite knowledge to operate certain high risk machinery, i.e. table saw, chop saw, grinder, drill press, band saw
- Ensuring that proper PPE is available and used when necessary
- Maintaining certain safety related equipment in the lab, the SDS book, and pit organization at competitions

Scholarships and Career Opportunities

FIRST provides over $80 million annually in scholarships available to juniors, seniors, and alumni. Visit https://www.firstinspires.org/scholarships for more information. *FIRST* also provides access to internship and career opportunities to high school students and alumni who currently participate or have participated in *FIRST*. Visit https://www.firstinspires.org/alumni for more details.

Time Commitment

Robotics is a team sport. As in any sport, team members are expected to attend most meetings, workshops, and competitions. We understand that scheduling conflicts and illnesses do occasionally rise and we try our best to accommodate you. If you cannot make a mandatory meeting, you must give notice to the secretary as soon as possible. Do not commit to anything you do not have the interest or time for.

8. Team Statement

Adapting the values of Westwood High School, Westwood Robotics does not discriminate and does not allow discrimination on the basis of race, color, sex, religion, disability, national origin, sexual orientation, or gender identity.

Hazing is not permitted. A copy of the anti-hazing law as noted in M.G.L. c. 269, §§ 17-19 is provided in the Westwood High School Student Handbook which can be found at http://www.westwood.k12.ma.us.

We do not condone political statements published by team members on any channel of communication belonging to the team. Exceptions include supporting campaigns or ideas that align with the mission or values of the team.

If you have any questions about the team or the contents of this handbook, please contact team leadership. The authority of this handbook is final; however, if any language remains unclear, its interpretation can be decided by team leadership. Team leaders have the authority to modify this handbook at any time. All students and mentors must agree to all the terms set above by returning a signed contract on the last page.

This handbook was last revised on October 3, 2019.

Westwood Robotics Contract

By signing below, I (and my parent/guardian, if under 18) understand and agree to all of the contents within the team handbook and the following points listed below:

- Participation in this program may expose the participant to risks of injury including, without limitation, from building, lifting, tools, robots, and electrical/mechanical components. The participant (and/or the parent/guardian if under 18) will assume all risks and injuries from participation.
- I agree to release Westwood Robotics, Westwood Robotics Inc., and its officers from any harm resulting from any claims of injury as a result of participation in the program. This contract does not hereby release any claims against any individual person, group of people, or facility associated with Westwood Robotics who intentionally causes injury to the participant.
- I will respect and treat other students, mentors, teams, and volunteers with kindness and professionalism at all times.
- I consent to having my photographs, recordings, name, work, or comments appear in content or media published by the team or approved by the team; signing this contract serves as written consent.
- I will be responsible for monitoring and keeping track of all important team communications and messages.
- I will be safe and report unsafe activity, broken tools, or unauthorized uses of tools immediately to team leadership.

_____

Participant Name

_____

Participant Email

_____

Participant Signature   Date

_____

Parent/Guardian Name (if Participant is under 18)

_____

Parent/Guardian Email and Emergency Phone (if Participant is under 18)

_____

Parent/Guardian Signature (if Participant is under 18)   Date