

Girls of Steel Robotics *FIRST*[®] Team #3504

Welcome Packet 2014-2015 Season

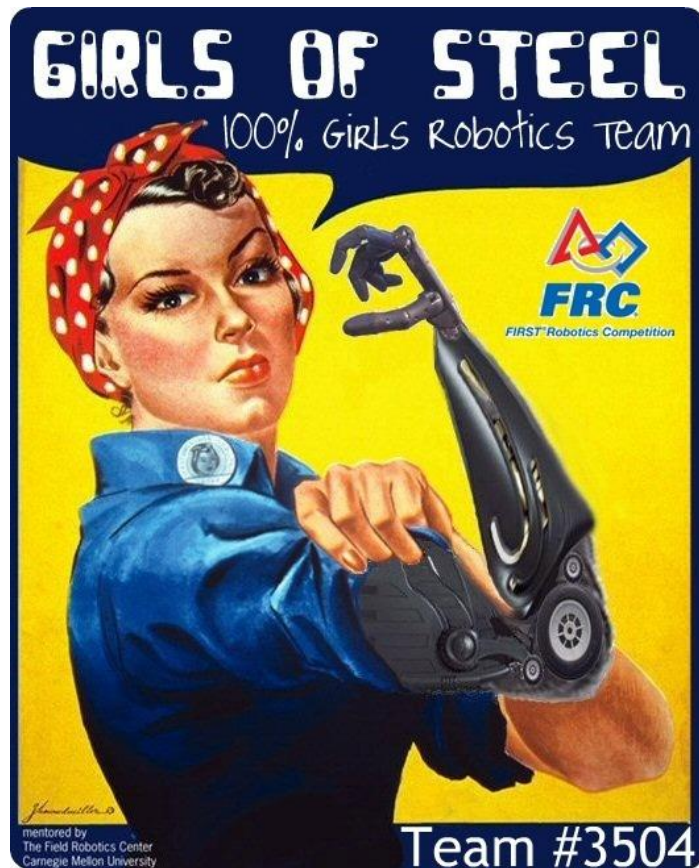


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(*Note: some team-specific information has been removed from the document. Please contact us at girlsofsteelrobotics@gmail.com if you have any questions.)

1.0 Mission Statement

To Find **Success**
In the Empowerment of **Girls**
Through Well-developed **Skills**
In **STEM**.



Welcome to the Girls of Steel! We look forward to working with you!

2.0 General Rules and Expectations

Once again, welcome to the Girls of Steel's fifth season as a FIRST Robotics Competition Team! We are all excited for you to be a part of this wonderful experience of learning to building a functioning robot from scratch that will be used to compete! In order to have another great year, a few general rules and expectations exist. These help ensure that the team meetings and events run as smoothly as possible so that we can concentrate on learning. Please remember:

- To read this handout and become familiar with the team and the requirements (see below).
- To be prompt to meeting and events.
- To communicate if you cannot attend meetings or events.
- Please check and respond to your email once a day as this is our main method of communication.
- To be polite and respectful to mentors, other teams, sponsors, and one another.
- To be positive role models for other teams and one another.
- To represent our team, sponsors, and CMU as positively as possible.
- To avoid inappropriate behavior; it will be subjected to disciplinary action including suspension from the team.
- To smile and thank mentors for their generous help once in a while.
- To reach out to leaders or mentors if you have any questions or concerns.
- To learn and have fun this year!

3.0 Team Structure

3.1 Leadership Council for 2014-2015

The Girls of Steel is a 100% student-run organization under the guidance of dedicated mentors. Every summer, a panel of mentors, Girls of Steel alumni, and Pittsburgh FIRST community members select the Leadership Council. The 10 leaders for 2014-15 season are:

Business

Business Manager: Sophia

Outreach Leader: Clarisa

Media Leader: Arushi

Finance Leader: Mackenzie

Cross-training Integration Leader: Sam

Technical

Technical Manager: Sylvie

Mechanical Leader: Molly

Programming Leaders: Sonia

Electronics Leader: Gigi

Technical Integration Leader: Becca

3.2 Additional Leadership Opportunities

- Various positions may be appointed throughout the season for:
 - Specific technical tasks (e.g., gripper construction, autonomous control)
 - Management tasks (e.g., safety lead, quartermaster)
 - Business tasks (e.g., booth construction, T-shirt design).
- Expertise in the area, attendance during preseason, past contributions to the team, organization, and communication skills are considered during the selection.

3.3 Technical Subteam Members

- During the preseason, the leaders and mentors will assign team members to technical subteams.
- Membership is not required but is highly recommended.
- Membership is not necessarily permanent.
- Subteam members may be reassigned throughout the season as needs and interests change.

3.4 The “Drive Team”

- Composed of selected 8 people:
 - four drivers (two primary drivers, two alternates)
 - two coaches (one primary, one alternate)
 - two human players (one primary, one alternate).
- In December, there will be meetings to assemble practice field robots, discuss how the drive team operates during competitions, and practice driving. The managers and mentors will select the Drive Team at the end of the last meeting.

3.5 The Mentors

We are most fortunate to have a group of dedicated and amazing mentors. Many of them have other full-time jobs and attend undergraduate and graduate schools. They generously and patiently share their time and expertise with us throughout the year. Our mentors:

Patti, Founding Mentor

George, Founding Mentor

Terry, Mentor and Coordinator

Chuck, Mechanical Mentor

Tom, Mechanical Mentor

Joe, Programming Mentor

Jean, Programming Mentor

Tony, Electronics Mentor

4.0 Requirements: Overview

There are several different types of requirements throughout the season. These include attendance at meetings, mechanitor days, and outreach events. Also, the season is divided into Preseason, Build Season, and Competition Season. Finally, there is a required student fee and fundraising requirement. You will receive additional information throughout the year. Consequences of unfulfilling requirements are found on the official forms at the end of the packet. A copy of the Requirements Checklist and the Summary of Meetings are at the end of the Welcome Packet.

4.1 Meetings during the season:

Preseason (9/30 – 12/16): required to attend 9 out of 12 meetings

Build Season (1/3 – 2/17): required to attend average of 10 hours/week

Competition Season (2/17 – 4/30): required to attend average of 3.5 hours/week

Off Season (May-Sept): no requirement although some activities and meetings occur

4.2 Outreach events: required to attend 5 events

4.3 “Mechanitor” days: required to attend 2 out of 6 “mechanitor” days

4.4 Three Student fees:

<u>Materials and registration</u>	total \$425 (discounted to \$350 if pay by 1 st deadline) \$150 by 10/31/14 (or \$125 by 10/15/14) \$275 by 12/31/14 (or \$225 by 12/15/14)
<u>Fundraising requirement</u>	\$200 by 2/28/15
<u>Travel costs</u>	regional competition(s), possible world championship

5.0 What to Expect During 2014-15

5.1 Preseason (September 30 – December 16, 2014)

- We learn and receive training in preparation for build season.
- Meetings:
 - Tuesday 5 – 8:30 pm at CMU. Dinner is not provided.
- Requirements:
 - Attend 9 out of 12 meetings
 - Participate in all training activities.
 - Participate in outreach events and mechanitor days

5.2 Build Season (January 3 – February 17, 2015)

- This lasts from kick-off (January 3) to Bag and Tag day (February 17).
- The most intense and busiest part of the season.
- Each member is expected to spend 10-15 hours per week, but any amount of time that you can commit will be useful to the team. Lasts 6 weeks.
- Meetings:
 - Mondays, Tuesdays, and Thursdays 5-8:30pm
 - Saturdays 9:00am-3:00pm
 - These times may be extended as Bag-&-Tag day approaches.
- Requirements:
 - Average 10 hours week
 - Mandatory all-hands meeting Tuesdays 5- 6. Teleconferencing available.
 - Participate in outreach events and mechanitor days.

5.2.1 Kick-off: Saturday, January 3, 2015, ~ 9am – 5pm

- The first day of build season when we learn about the game.
- Watch the telecast of the game announcement with the other local teams in the morning at Chartiers Valley High School in Bridgeville PA.
- Learn the rules, strategize, and brainstorm our preliminary robot design in the afternoon at our practice field or CMU.

5.2.2 Week 1

- Formulate and design the robot.
- Construct some simple prototype with materials like cardboard and duct tape.
- Build the kit chassis that will be used on the competition robot.
- Decide on our strategy and the basic structure of the robot by the end of the week.

5.2.3 Weeks 2-6

- Dedicated to working out the details and implementing the robot designed during week 1
- Build 2 robots: the competition robot and a duplicate robot for driver practice.
- Co-host a Week Zero Scrimmage (Saturday, 2/14/15) at the practice field. Local robotics teams can engage in mock games with other teams.

5.2.4 Bag and Tag: Tuesday, February 17, 2015

- The last day of build season.
- By midnight, we must “bag-and-tag” the robot by sealing it in a large plastic bag that cannot be opened until our first regional competition.

5.3 Competition Season (February 18 – April 30)

- It is the time between Bag-&-Tag and the first regional competition.
- Preparations for competition(s) include:
 - refine small parts of the robot (we are allowed to keep a “withholding allowance” of up to 30 pounds of the robot outside of the bag)
 - put finishing touches on our booth
 - practice talking to judges
 - work out a scouting system
 - practice for drivers
- Meetings:
 - Tuesdays 5-8:30pm
 - Saturdays 9:00am-3:00pm.
- Requirements:
 - Average of 3.5 hours/week
 - Mandatory all-hands meeting Tuesdays 5-6. Teleconferencing available.
 - Participate in outreach events and Mechanitor days

5.3.1 First regional competition: Greater Pittsburgh Regional: March 4-7, 2015, ~8am – 6pm

- Must have completed all the requirements to participate in competitions.
- Held at the California University of Pennsylvania's Convocation Center in California PA
- **The general schedule:**

Wed evening: deliver robot to CalU (small team)

Thursday: set up booth, un-bag robot, integrate withheld parts, get robot inspected, compete in 3-4 practice rounds

Friday: compete in 7-8 qualification rounds

Saturday: compete in 2-3 qualification rounds and elimination tournament

5.3.2 Second Regional Competition: The Buckeye Regional: March 25-28, 2015.

- Must have completed all the requirements to participate in competitions.
- Students make their own travel arrangements (carpools) and hotel reservations.
- Held at the Cleveland State University Wolstein Center in Cleveland OH
- **The general schedule:**

Wed evening: deliver robot to Wolstein Center (small team)

Thursday: set up booth, un-bag robot, integrate withheld parts, get robot inspected, compete in 3-4 practice rounds

Friday: compete in 7-8 qualification rounds

Saturday: compete in 2-3 qualification rounds and elimination tournament

5.3.3 FIRST Championship: April 22-25, 2015 (if we qualify)

- We will travel as a team by bus to the Edward Jones Dome in St. Louis, MO.
- **A general schedule:**

Wed. around 4am: team bus departs from CMU (~12 hour drive)

Wed. evening: deliver robot to Edward Jones Dome (small team)

Thursday: set up pit, un-bag robot, integrate withholding allowance parts, get robot inspected, compete in 1-2 practice rounds, compete in 3-4 qualification rounds

Friday: compete in 5-6 qualification rounds

Saturday: compete in 1-2 qualification rounds and elimination tournament

Saturday ~7pm: bus departs from Edward Jones Dome

Sunday ~7am: bus arrives at CMU

5.4 Off season (May-September)

- Many of the Girls of Steel activities informally continue.
- Outreach events occur regularly, i.e. summer camps, robot demos, and presentations.
- One or two full-team meetings may occur.
- New leadership council is selected in May/June.
- Subteams for outreach, fundraising, and recruiting plan for the following year.
- Summer classes in CAD, Electronics, and Programming may be offered in the summer of 2015.

5.5 Tips

- Time management and organization are very important.
- Try to get as many requirements done especially outreach *before* the build season, the busiest and most intense season.
- Document and keep track of your volunteering hours.

6.0 Shop Safety Reminders*

6.1 While you are in the machine shop:

- Make sure a mentor is always present.
- Always wear safety glasses, close-toed shoes, and have your hair tied back.
- Do not wear any dangly jewelry or loose clothing (including skirts). These can get caught in the machines.
- Make sure you know how to operate a machine correctly and safely.
- Do not try anything new by yourself!
- No food or drinks are permitted in the machine shop at any time.
- Do not distract others working in the machine shop
- Concentrate on the task you are performing.
- No cell phone use while operating a machine.
- Never leave a running machine unattended.
- Always be aware of your surroundings.

6.2 Before you leave the machine shop:

- Make sure the area is clean, neat, and as organized as you have found it.

6.3 Always refer to the posted guidelines in the machine shop & high bay areas.

7.0 Facilities and Parking

7.1 Work Area: Carnegie Mellon University

- Newell Simon Hall Highbay
 - Robot construction mostly occurs here. Access is at the door at the east end of the highbay which will be unlocked during our meeting times.
 - Most of the meetings during the build season are held here
- Note: All-Hands Meeting on Tuesdays 5-6 pm. NSH 1507. Changes to the room number for the meeting will be announced by email.
- Parking: Morewood Parking Lot. Free parking after 5 pm weekdays and on weekends.
- Map of CMU: page 29.

7.2 Practice Field: Strip District

- Address: 2515 Liberty Ave., PGH, PA 15222.
- Parking: Rycon lot located between 26th and Liberty Avenue.
 - Monday-Thursday: after 5pm; Friday: after 4pm; Saturday-Sunday: all day.
- Used to develop strategies, practice driving robots and host Week Zero Scrimmage. Girls of Steel FLL teams hold practices and other inter-team meetings at the practice field.

8.0 Useful Links

Girls of Steel website: <http://girlsofsteelrobotics.com/>

FIRST website: <http://www.usfirst.org/roboticsprograms/frc>

9.0 Summary of Meeting Dates

- Preseason (9/30 – 12/16):*** Tuesday 5 – 8:30 pm at CMU.
required: attend 9 out of 12 meetings
- Build (1/3 – 2/17):*** Mondays, Tuesdays, and Thursdays 5-8:30 pm
Tuesday 5-6 pm all-hands mandatory
Saturdays 9:00am-3:00pm
required: attend average of 10 hours/week
- Competition (2/18 – 4/30):*** Tuesday 5-8:30pm
Saturday 9:00am – 3:00pm
required: attend average of 3.5 hours/week
- Off (May-Sept):*** none; some activities, meetings and classes occur

Exhibit A

12.0 Team Safety Rules

Know Your Equipment and Tools—

You must complete documented training before using any piece of equipment or tool. Never attempt to use equipment or tools you have not received training on.

You must be supervised by a mentor at all times, and especially when using equipment or tools (no matter how simple the tool is or how experienced you are).

Use the right tool for the job (e.g., don't use a screwdriver as a hammer).

Don't use broken equipment or tools; report broken equipment or tools to a mentor immediately.

Return all equipment and tools to their proper location and clean up your workspace when you're finished.

Dress for Safety—

You must wear safety glasses at all times while in the shop. Use safety gear (e.g., safety glasses, face shields, and gloves) whenever it's needed.

No loose-fitting clothing or jewelry (e.g., dangly earrings and necklaces) allowed in the machine shop or high bay areas.

No open toe shoes or sandals allowed in the machine shop or high bay areas

No tank tops/shorts/skirts/dresses when in the machine shop or working on or near the robot. Bring shop clothes to practice.

Long hair must be tied back securely and out of the way.

Be Aware—

Be sure your workspace is clean and well-lit. Be aware of your surroundings (e.g., take care when carrying long pieces of 80/20, etc.).

Report all injuries immediately to a mentor (no matter how minor the injury may seem).

No eating or drinking in the machine shop.

No horseplay allowed!

Safety is your top priority. If you need help with something or if you are not sure what you're doing--ASK!

Exhibit B

13.0 Practice Field Rules

Location: 2515 Liberty Avenue Pittsburgh PA 15222 <http://goo.gl/maps/jX1mT>

Parking is available in Rycon's outdoor parking lot adjacent to the practice field after 5 p.m. on weekdays and on weekends. NO PARKING is permitted except as listed. There is no security at the parking lot. ***Park at your own risk.***

Hours: Contact GirlsofSteelRobotics@gmail.com for current hours of operation.

General Rules:

1. All FIRST teams invited to bring a robot or to come to share ideas with others must be accompanied by a minimum of one adult mentor/chaperone per ten students.
2. Guests must complete a Carnegie Mellon University Understanding and Release form and bring it to the first visit to the field.
3. In case of inclement weather, we will follow the Pittsburgh Public Schools delays and closings schedule.
4. Wear safety glasses and follow all standard safety precautions when working on or operating robots.
5. Use the practice field in a safe, respectful, and cooperative manner at all times.
6. Horseplay on the field or field elements, eating, and drinking on the field are not permitted.
7. Please bring food and drinks to share.
8. Teams should bring their own safety glasses, tools, and supplies.
9. If there is an accident and/or something breaks or someone is injured immediately notify the Girls of Steel mentor on site.
10. Thank you!

Exhibit C

14.0 Attendance and Participation Requirements

14.1 Junior Team Members

Attendance Requirement - Preseason. New Junior Team members are strongly encouraged to attend the New Student Orientation on 9/23/14 from 5:30 to 7:00 pm. There will be 12 scheduled preseason meetings (September 30 – December 16, 2014). I understand that I will be invited to attend select Team meetings. There is no attendance requirement for junior members.

Attendance Requirement - Build Season. I understand that I will be invited to attend select team meetings during the 6 weeks of the build season from January 3 – February 17, 2015. There is no attendance requirement for junior members.

Attendance Requirement - Competition Season. I understand that I will be invited to attend select team meetings during the time period between Bag & Tag and the last competition. There is no attendance requirement for junior members.

Outreach Requirement. I understand that I may be invited to participate at Girls of Steel outreach events (including FLL team mentoring, robot demos, presentations, etc.). There is no outreach requirement for junior members.

“Mechanitor” Requirement. I understand that I may be invited to participate at Girls of Steel “mechanitor” days. These meetings may be scheduled during the 3rd week of the month from October through May. There is no “mechanitor” requirement for junior members.

Exhibit C2

14.2 Team Members

Attendance Requirement - Preseason. New Team members must attend the New Student Orientation on 9/23/14 from 5:30 to 7:00 pm and the Kick-Off Meeting on 9/30/14 from 5:00 to 8:30 pm. In addition, Team members must attend at least 9 of the 12 scheduled preseason meetings (September 30 – December 16, 2014). I understand that failure to do so may result in dismissal from the team.

Attendance Requirement - Build Season. I understand the expectation to attend team meetings for a minimum average of 10 hours per week for the 6 weeks of the build season from January 3 – February 17, 2015. I understand that failure to do so may result in limits to my participation with the team: I will not be invited to travel with the team or attend regional competitions with the team and I will not receive a team uniform.

Attendance Requirement - Competition Season. I understand the expectation to attend the Tuesday all-hands meetings or participate with the team for a minimum of 3.5 hours per week during the time period between Bag & Tag and the last competition. I understand that failure to do so may result in limits to my participation with the team: I will not be invited to travel with the team or attend regional competitions with the team and I will not receive a team uniform.

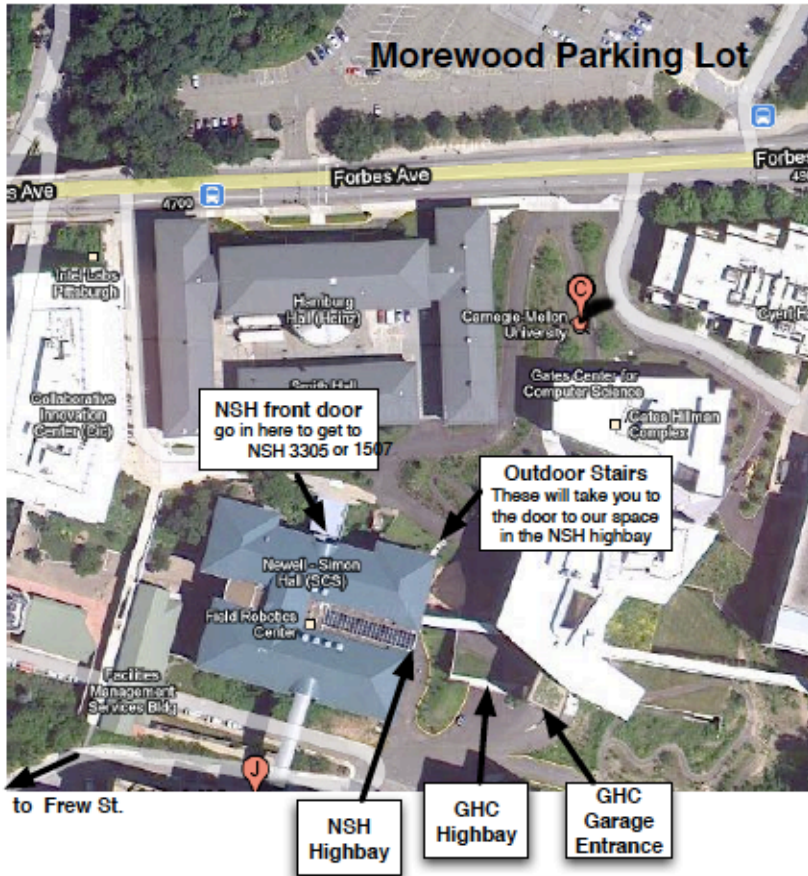
Outreach Requirement. I understand the expectation to participate in a minimum of 5 Girls of Steel outreach events (including FLL team mentoring, robot demos, presentations, etc.) by February 28, 2015 for a total of 10 Girls of Steel outreach events by February 28, 2016. I understand that failure to do so may result in limits to my participation with the team: I will not be invited to travel with the team or attend regional competitions with the team and I will not receive a team uniform.

“Mechanitor” Requirement. I understand the expectation to participate in 2 of the 8 monthly clean-up meetings at CMU. These meetings will be scheduled during the 3rd week of the month from October through May. I understand that failure to attend 1 of these meetings by February 28, 2015 may result in limits to my participation with the team: I will not be invited to travel with the team or attend regional competitions with the team and I will not receive a team uniform.

15.0 Map, Requirements Checklist and Volunteering Form

15.1 Campus Map

Carnegie Mellon University 5000 Forbes Ave Pittsburgh PA 15213



15.2 Requirements Checklist

See page 8 for more information.

15.3 Non-GoS Volunteering:

Each person should fill out and submit it to Sophia at the beginning of each month.