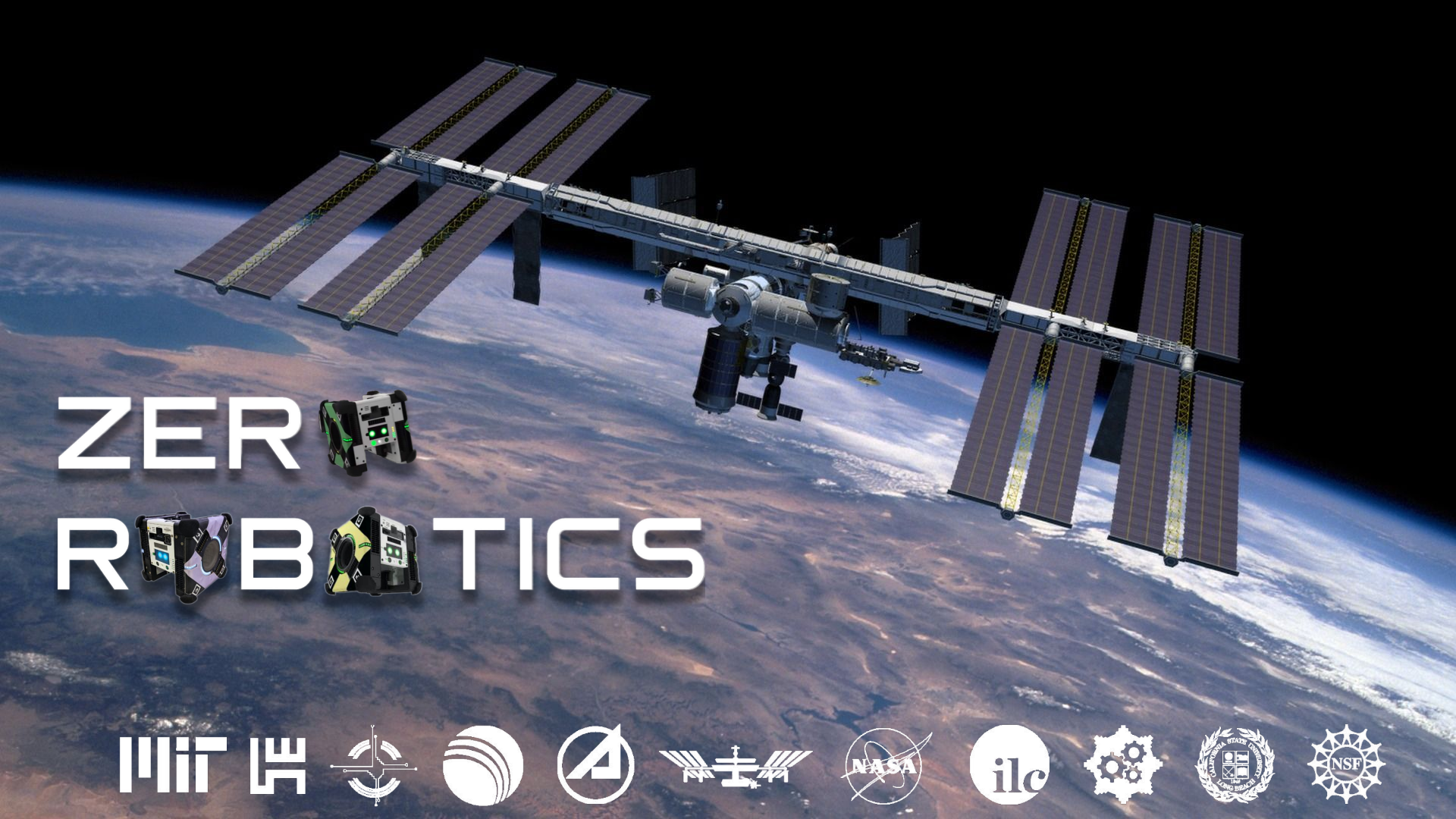
ZERO ROBOTICS
NASA
ilc
NSF

2026 High School Tournament

Launch Day

January 9, 2026

11:00am

This meeting will be recorded

ZERO ROBOTICS

Agenda

Welcoming Remarks

Introduction to Zero Robotics Team

Tournament Schedule

About Astrobee

Team Formation

Piazza

Alliance Overview

2026 High School Game

Website Overview

Next Steps

ZERO ROBOTICS

Meet the Team!

Prof. Danielle Wood
Principal Investigator

Alissa Chavalithumrong
PhD Student Lead

Dinuri Rupasinghe
Masters Student

Dr. Scott Dorrington
Post Doctoral Researcher

Katie Magrane
Outreach Director

Mizanul Chowdhury
IDE Specialist

Undergraduate Research Opportunity Program

space enabled

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Ella Chen

Monagoz Okorie

Samhita Pokkunuri

ilc innovation learning center

MIT

Tournament Schedule

January 9, 2026	**Game Concept & Manual Released**
January 11, 2026	**Code of Ethics Commitment Signed & Pre-program Survey Due**
January 12, 2026	**Game Begins Online**
January 19, 2026	**Team Name and Team Description Due**
January 23, 2026	**Check Point Code Due** (check point scores do not impact ranking) (Friday: 12pm EST)
January 30, 2026	**Check Point Code Feedback & Alliances Announced**
February 13, 2026	**Final Code Due** (submitted online - Friday: 12pm EST)
February 18, 2026	**Code Development & Strategy Presentation** Due to ZR Team
February 21, 2026	**Zero Robotics Finals at MIT** (viewing parties available at alternate locations)

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WRITE CODE FOR NASA's NEXT GENERATION FREE FLYER!

- **S**ynchronized
- **P**osition
- **H**old
- **E**ngage
- **R**eorient
- **E**xperimental
- **S**atellites

Three nano-satellites designed by MIT to research estimation, control, and autonomy algorithms

The Next Generation Free Flyer Astrobee

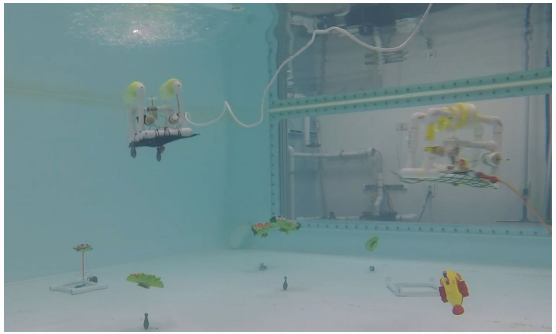
ZERO ROBOTICS

NASA decommissioned the SPHERES in 2020. They are now on exhibit in the Smithsonian. Zero Robotics is now using NASA's next generation free-flyer, the Astrobee.

International Space Station Availability

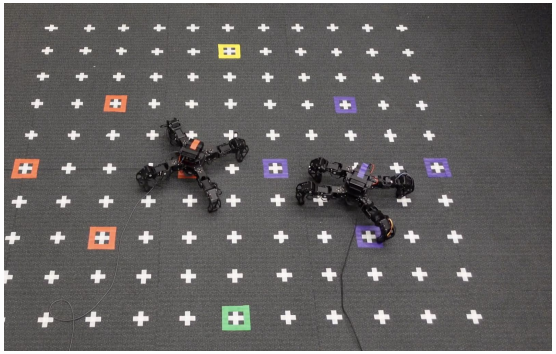
2026 Finals Update

- Due to changes in program availability, we are unable to support an ISS-based final for the 2026 high school competition. We understand that the ISS has always been a special and exciting part of Zero Robotics, and we know this news may be disappointing, but this change doesn't affect the challenge, impact, or value of your work.



What's new?

- This year's finals will run on ISS robotic analogs, where your code will execute in **real time on physical robots in a space-relevant testbed.** Same challenge, new (very cool) environment.



We can't wait to see what you build!

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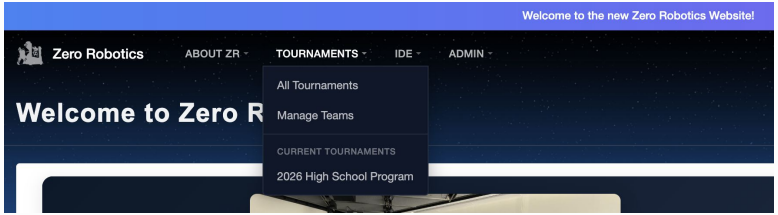
Add Students To Your Team!

1. Team leads should sign into the Zero Robotics website.

2. Navigate to “Manage Teams” under the TOURNAMENTS tab. You can edit team information and add students here.

3. If your team is registered correctly for the tournament, you’ll see the following active message on the page. If not, contact us via Piazza!

4. Add team members to your roster by submitting their emails. Once you’ve submitted their email, you can select to make them a team lead, or remove them.



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Questions & Answers + Important ZR Updates

https://piazza.com/mit/spring2026/zrhs2026

Access Code: ZRHS26

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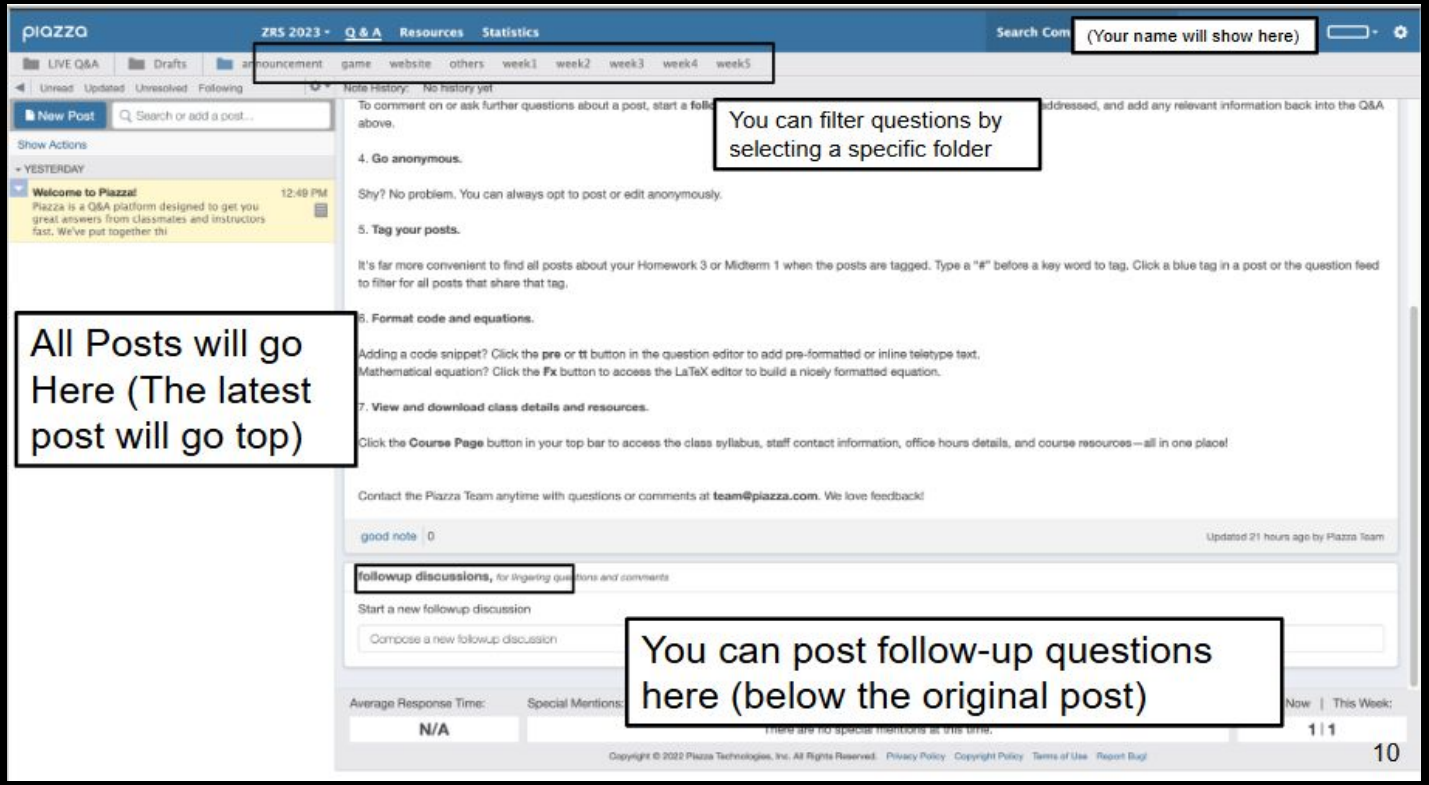
piazza
ZRS 2023
Q & A
Resources
Statistics
Search Com
(Your name will show here)
LIVE Q&A
Drafts
announcement
game
website
others
week1
week2
week3
week4
week5
Unread
Updated
Unresolved
Following
Note History: No history yet
New Post
Search or add a post...
Show Actions
YESTERDAY
Welcome to Piazza!
12:49 PM
Piazza is a Q&A platform designed to get you great answers from classmates and instructors fast. We've put together thi
You can filter questions by selecting a specific folder
All Posts will go Here (The latest post will go top)
To comment on or ask further questions about a post, start a follo
addressed, and add any relevant information back into the Q&A above.
4. Go anonymous.
Shy? No problem. You can always opt to post or edit anonymously.
5. Tag your posts.
It's far more convenient to find all posts about your Homework 3 or Midterm 1 when the posts are tagged. Type a "#" before a key word to tag. Click a blue tag in a post or the question feed to filter for all posts that share that tag.
6. Format code and equations.
Adding a code snippet? Click the pre or tt button in the question editor to add pre-formatted or inline teletype text.
Mathematical equation? Click the Fx button to access the LaTeX editor to build a nicely formatted equation.
7. View and download class details and resources.
Click the Course Page button in your top bar to access the class syllabus, staff contact information, office hours details, and course resources—all in one place!
Contact the Piazza Team anytime with questions or comments at team@piazza.com. We love feedback!
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Now | This Week:
N/A
There are no special mentions at this time.
1 | 1
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Alliances

What is an alliance?

- A group of ~3 teams
- Teams collaborate during the Finals

How alliances are formed

Created by the MIT Zero Robotics team

Based on:

- Time zones
- Scheduling feasibility
- Team balance
- Technical considerations

Teams do not choose their alliances!!

Why alliances exist

- Support collaboration across regions
- Reflect real-world engineering teamwork

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2026 Competition: Galactic Greenhouse

Your Mission:

Program Astrobee, an autonomous space robot, to run a sustainable garden in microgravity. Engineers must autonomously plan to plant, water, and harvest crops while managing time and battery power of Astrobee while monitoring limited resources!

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Game Play

Autonomous robot

You program one Astrobee

Code runs on its own for the full match against another opponent!

Move & act in 3D

Navigate between 6 garden plots

Must physically move to plant, water, harvest, or refill

Crop care loop

Plant ⟶ water twice within 60s ⟶ wait ⟶ harvest

Miss a step and the crop fails!

Shared zones

Astronaut Zone ⟶ bonus points!

Watering Zone ⟶ refill water

Only one robot at a time in each

Power-ups (optional)

You may spend points during the match to unlock upgrades

Examples:

- Sprinklers ⟶ auto-watering
- Tractor & attachments ⟶ faster actions
- Tradeoff: fewer points now for time savings later

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How will you be scored?

🥕 Harvest crops

Each crop has base points

Repeating the same crop gives diminishing returns

👩🏽‍🚀 Visit the astronaut

+5 points per visit

Receive a bonus crop

Bonus crops give +50% harvest points

Complete all 3 bonus crops ⟶ +10 extra points

⚡ Stay active

+0.5 points per meter traveled

+2 points per unique plot explored

Big takeaway

Active, diverse strategies win!

ZER RBTICS

Website Overview

zerorobotics.mit.edu

Sign In:

zerorobotics.mit.edu

- "Sign In with Google"

Resources:

zerorobotics.mit.edu

- 2026 High School Tab
  - ***Game Manual***
  - ***Tutorials and API***
  - ***Surveys***
  - ***Piazza Link***

2026 Game IDE will go live on the website 1/12/25

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Next Steps!

NEXT STEPS:

- Team Building - have fun!
- Pre-Program Survey Completed
- Ethics Commitment and AI Disclosure Signed
- Create a Piazza Account
- Create a ZR Account

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THANK YOU
GOOD LUCK

NEXT STEPS:

Team Building - have fun!

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