International Participant Guidelines – 2025 STEM Olympiad & Battle of Robots (Astana)

Overview

The **2025 STEM Olympiad – "Innovations in Education" & Battle of Robots** is the final stage of an international robotics competition for school students. The event will take place **November 21–23, 2025** in **Astana, Kazakhstan** (with teams arriving on Nov 21 and departing on Nov 24). This document outlines the participation requirements and provides support for **foreign (international) participants**. All international teams will compete under the same conditions and format as local teams, with the event conducted primarily in English and Kazakh (Russian translation available upon request).

Eligibility & Team Composition

- **Who Can Participate:** International teams of **high school students** (approximately ages 14–18, grades 8–11 or equivalent) are eligible to apply. Participants should have a strong interest in STEM (robotics, engineering, programming, 3D modeling).

- **Team Size:** Each team may consist of **2 to 3 students** from the same school/organization. Teams must be accompanied by a mentor/teacher or adult team leader (one mentor can lead multiple teams).

- **Teams per Country:** To encourage broad international participation, up to **5 teams per country** may be invited to the Olympiad. Each country may also have **one mentor/teacher** accompanying its teams. (Note: Sponsorship for travel is limited to a subset of teams – see **Selection & Sponsorship** below.)

Registration & Video Submission (How to Apply)

Application Deadline: All international participants must submit their application by **November 5, 2025**. The application process has a few important steps:

1. **Build a Combat Robot:** Each team should **design and build a functional combat robot** prior to the event. This robot will be used in the "Battle of Robots" competition segment. There is no specific hardware platform mandated, but the robot should be safe and competition-ready.

2. **Prepare an Introduction Video:** Record a **2-minute video** introducing your team and showcasing your robot. In this video, team members should **demonstrate the robot** (show its features and it in action) and **explain** the design, features, and any unique aspects of the robot. Treat this as a creative team introduction – feel free to highlight your team's personality, motivation, and the work put into your robot. *(The video may be spoken in any language, **but you must include English or Kazakh subtitles** so that judges can understand the content.)*

3. **Upload the Video:** Upload your 2-minute introduction video to **YouTube** (you can set it as Unlisted or Public). Ensure the video link is accessible and not password-protected.

4. **Fill Out the Registration Form:** Complete the **online registration form** for international participants (Registration Form Link – https://forms.gle/211upG9SFkp8EMAt6). You will need to provide team details, participant names/ages, your school/organization, mentor contact information, and the **YouTube video link**. Please fill out all required fields accurately.

5. **Submit by the Deadline:** Submit the registration form **no later than November 5, 2025, 23:59 Asia/Astana (UTC+5)**
6. . Early submissions are encouraged – **invitations will be extended on a rolling basis**, giving priority to teams who apply early with a high-quality robot and video presentation.

Important Note: After submitting your video and application, **you are allowed to continue improving your robot**. Teams may refine or upgrade their robot between the video submission and the event. You may even bring a **different robot** to the competition than the one shown in the video if necessary – the video is primarily used for judging your entry and does not lock you into that exact robot design.

Selection & Sponsorship Quotas

All applications and introduction videos will be reviewed by the competition **judging panel**. Invitations will be issued to the strongest and most promising teams, with consideration for **early submission**. The goal is to invite as many different countries as possible, while ensuring quality and diversity of robotic projects.

- **Notification of Invitation:** If your team is selected, you will receive an official **invitation** from the organizers shortly after the application deadline (on or around the second week of November 2025). This invitation will confirm your participation in the final event and provide further instructions (including travel arrangements).

- **Sponsored Teams Quota:** The organizers have allocated **sponsorship quotas** to support international teams. **Up to 2 teams per country (maximum of 6 students total)** and **1 accompanying adult mentor** from that country can be fully sponsored. This sponsorship includes coverage of round-trip airfare and full local hospitality (see next section). Essentially, for each country invited, *two teams and one mentor can receive a "full package" support*.

- **First-Come, First-Qualified Basis:** If more than two teams from the same country apply, priority for sponsorship will be given to the **earliest applications that meet the quality criteria**. Teams that submit early and present a well-made robot and video have a higher chance to receive the travel sponsorship.

- **Additional Teams:** If a country has more than 2 high-quality teams interested, the organizers may still invite additional teams (up to the maximum of 5 teams per country). However, any teams beyond the sponsored quota would need to **cover their own travel expenses** to Astana. The organizers will still provide local accommodation and participation free of charge for all invited teams, but free airfare cannot be guaranteed beyond the quota. These details will be communicated during the invitation stage.
  Registration Form Link – https://forms.gle/211upG9SFkp8EMAt6

Travel & Accommodation Support

Cost-Free Participation: There is **no registration or participation fee** for invited international teams. The Olympiad covers the on-site expenses for the event days so that young talent from around the world can join without financial barriers.

For teams that receive the sponsorship (as per quotas above), the following will be provided **free of charge** by the organizers:

- **Air Travel:** Round-trip flight tickets from your home country to Astana, Kazakhstan for up to 6 students (2 teams) and 1 mentor per country (economy class or equivalent). Travel details will be arranged in coordination with the teams once invitations are confirmed.

- **Airport Transfers: Pick-up from Astana International Airport** on arrival (November 21, 2025) and transportation to the official hotel; plus return transfer from the hotel to the airport on departure (November 24, 2025). The organizers will greet you at the airport and ensure you reach the hotel safely. Local city transport between the hotel and event venue is also provided for all participants.

- **Hotel Accommodation: Hotel stay in Astana** will be provided for the duration of the event. Teams should plan to arrive on **21 November 2025** (hotel check-in available from afternoon) and depart on **24 November 2025** (check-out by noon). The organizers will cover your accommodation for the nights of Nov 21, 22, and 23. If a team wishes to arrive earlier or extend their stay beyond Nov 24, they may do so at their own expense (the organizers can assist with recommendations, but those extra nights are not covered). Each team will be assigned comfortable shared rooms; the mentor may have a separate room. Details of the hotel (name, address, booking confirmation) will be provided in the invitation packet.

- **Meals:** All meals during the competition days (Nov 21–23) will be provided. This includes daily breakfast, lunch, and dinner, plus coffee/snack breaks as needed. Participants will enjoy local Kazakh hospitality and an introduction to Kazakh cuisine, with international options available. (If anyone has dietary restrictions or allergies, they should inform the organizers in advance via the registration form or email.)

- **Local Transportation:** The organizers will arrange **group transport within the city** for event-related activities. This includes shuttles between the hotel and the competition venue, as well as any off-site excursions that are part of the official program.

- **Visa Support:** If your country requires a visa to enter Kazakhstan, the organizers will provide an official invitation letter or guidance to facilitate the visa process. **Visa fees** are generally not covered, but many countries have visa-free entry or simplified e-visa processes for Kazakhstan. Teams should check the requirements and begin visa applications promptly after receiving the invitation. The organizing committee can assist with any documents needed for minors traveling or other special cases.

Please note: Teams are responsible for obtaining **travel insurance** for all members (if required by your school or guardians) and for bringing any necessary **robot parts, tools, or laptops** they might need during the competition. The organizers will provide the competition arena and basic power access, but teams should be prepared with their specific equipment (controllers, chargers, adapters, etc.). Ensure your robot is safely packed for air travel; it may be transported as checked baggage – consider carrying critical components in hand luggage if possible.

Event Format & Languages

The **competition format** for the Olympiad and Battle of Robots is uniform for all participants (local and international). International teams will compete on equal footing under the same rules and schedule. Key points about the event format:

- **Competition Categories:** The Olympiad consists of several STEM challenges: **"Battle of Robots" (combat robotics competition), Engineering Design, Programming, and 3D Modeling**. All participating teams are expected to take part in these categories. Some tasks will involve **live robot battles** between teams' robots in a controlled arena (knockout or point-based matches), while other tasks will test teams' engineering, coding, and design skills through on-site problem-solving. Detailed rules and task descriptions for each category will be provided to invited teams in advance (along with any "home assignment" guidelines). For example, teams will have prepared their combat robot as a home assignment for the Battle, and there may be a project or prototype to prepare for the engineering category as well. Be ready for both **practical robot contests** and **theoretical/technical challenges**. Check out the video of the last Olympiad: https://youtu.be/sCJYjjs8lF4

- **Schedule:** The event spans **3 days (Nov 21–23, 2025)**. Day 1 (Nov 21) will include registration, an opening ceremony, and possibly initial rounds or a display of the teams' home projects (such as a showcase of your combat robots). Days 2 and 3 will feature the core competitions in each category. The exact schedule (timings for each round and category) will be shared closer to the date and

again during on-site registration in Astana. On the final day (Nov 23), there will be an awards ceremony in the evening to announce winners. International teams should plan to stay through the evening of Nov 23. Departure is on Nov 24 as mentioned.

- **Language:** The official working languages of the Olympiad are **English** and **Kazakh**. All general instructions, announcements, and materials will be available in English. Kazakh translation or parallel announcements will be provided as needed (since the event is hosted in Kazakhstan). For any teams not fluent in English or Kazakh, **limited Russian language support** can be arranged upon request (as many local staff and volunteers also speak Russian). Your team's mentor or one of the members should be able to communicate in one of the official languages for smooth participation. Judges and referees will primarily use English for technical Q&A and scoring. If your team has difficulty with any communication, please inform the organizers – we will ensure you can understand the tasks (either via translation or an assigned volunteer).

- **Fair Play and Rules:** All teams must adhere to the competition rules and show good sportsmanship. This includes following safety rules for the robot battles (e.g. weapon power limits, no dangerous materials – a detailed rulebook for combat robots will be provided), completing tasks honestly without outside assistance, and respecting judges' decisions. The organizers emphasize a friendly international exchange – teams will have the opportunity to interact, learn from each other, and experience Kazakh culture during the event.

- **Equipment and Facilities:** The competition venue (a school in Astana) will have a **designated pit area** or classroom for teams to work on their robots, make last-minute adjustments, and relax between rounds. Basic tools and materials (screwdrivers, soldering irons, glue guns, etc.) might be available in limited supply, but teams are encouraged to bring their own critical tools or spare parts. Wi-Fi internet access will be available. A first aid station and staff supervision are provided for safety.

- **Judging Criteria:** Each category will have its own judging or scoring system. For the **Battle of Robots**, typically matches are judged on robot performance (damage, aggression, control, etc.) or by knockout. For project/design categories, judges will evaluate creativity, technical skill, and problem-solving. Complete criteria will be shared with teams in advance so you know how you'll be evaluated.

Important Dates (Summary)

- **Application Submission Deadline: November 5, 2025** – Submit the online form with video link by this date to be considered for invitation and sponsorship. Registration Form Link – https://forms.gle/211upG9SFkp8EMAt6

- **Invitation Notification: By mid-November 2025** – Teams will be notified of selection (rolling notifications may start earlier for early applicants). If invited, you will receive a formal invitation letter and travel coordination will begin immediately.

- **Arrival in Astana: November 21, 2025** – (Check-in at hotel from 14:00 onward). An orientation/registration session will be held on this date, likely in the evening, so plan your flights accordingly (arrive by afternoon if possible).

- **Competition Dates: November 21–23, 2025** – Olympiad and Robot Battle events. Full schedule will be provided, but expect full-day activities on Nov 22 and Nov 23, with an opening event on Nov 21.

- **Departure: November 24, 2025** – (Hotel check-out by 12:00 noon). Teams will be transported to the airport for their return flights.

- **Follow-up:** Winners and outstanding participants will be recognized at the awards ceremony on Nov 23. Some may receive prizes or even invitations to future events (for instance, top teams might be invited to an international robot competition in 2026). All participating teams will receive certificates of participation.

Contact & Further Information

If you have any questions or need clarifications about the participation process, feel free to reach out to the organizers. We are here to help you with the application, travel arrangements, or any concerns regarding the competition.

- **Official Email Contact:** support@stem-academia.com, rnd@stem-academia.com (for any queries about registration, visas, technical requirements, etc.)

- **Telegram/WhatsApp (if available):** +7 701 071 6606 / +7 705 730 0970 (We will have a group or channel for updates to all invited international teams).

- **Website:** Additional information can be found on the STEM Academia website https://stem-academia.com/stem-olympiad/2025-year/, where general rules and news about the Olympiad are posted.
- **Youtube channel and more videos:** https://youtu.be/sCJYjjs8lF4
- **Instagram:** https://www.instagram.com/stem_academia/

We look forward to welcoming teams from around the world to Astana for this exciting event! By participating, you will not only compete in challenging robotics and STEM tasks but also experience cultural exchange, make new friends, and explore the innovative spirit of Kazakhstan's capital city.

Don't miss this opportunity – submit your team's application by November 5, 2025, and join us for the 2025 STEM Olympiad & Battle of Robots!

SHORT-FORM CONSENT (Hand written and signed by parents or legal guardian)

Event: International STEM Olympiad & Battle of Robots 2025 (Astana, Nov 21–24)
Participant: _____

[Full Name, DOB, Passport No.]

_____

Parent/Guardian: [Full Name, Relationship, Phone, Email]

I authorize my child to participate in the above event and to travel internationally to Kazakhstan under supervision of the team mentor and organizers. I acknowledge the inherent risks of robotics activities and agree that my child will follow all safety rules and staff instructions. I consent to emergency medical treatment if required. I grant permission for event photos/videos

of my child to be used for non-commercial event promotion. I consent to processing of personal data for event logistics. I understand accommodation/meals/local transfers are provided for invited teams; flight sponsorship is limited and subject to confirmation.

Parent/Guardian Signature: _____

Date: ___ / ___ / 2025
Printed Name: _____
Participant Signature (optional): _____

**Please prepare this form in advance and upload the scan or photo of it during the registration.*

Homework Assignment Project:

Build a robot for the Robot Battle Tournament.
This is NOT LEGO sumo! You need to build a **combat robot**!

TASK:

This year, we are once again including the Robot Battle Tournament.
The format of the tournament will be similar to this one:
https://battlebricks.org/bricks-cascade-2023-recap/

Video from the tournament: https://youtu.be/olzjB3Mk-_4

Visually, the robot battles will resemble the tournament in the video, but with many differences in the rules and construction features. Details are provided below. You must carefully read and build your robot according to the rules.

ROBOT DESIGN RULES

ELECTRONICS AND POWER SYSTEMS

- Motors can be of any brand or manufacturer.
- Speed controllers and receivers can be any standard control system, third-party compatible system, or custom-built control system. **All systems must be approved by the organizers** before the competition starts.
- Using LEGO brand systems is not recommended, as they break easily. See the video for examples of homemade robots smashing LEGO bots: https://youtu.be/BzjHdKiqrOA
- Battery packs and power supplies can be from third-party manufacturers.
- Batteries must not be left exposed. The housing must have covers or shields to protect internal components. For example, battery compartments **MUST** have protective covers.
- The robot must be fully controllable via a remote-control system operated by the team.
- The robot can be built on **any platform** using **any approved materials**.
- 3D-printed materials may be used as part of the robot's body. 3D-printed parts are allowed **only if they are functioning components**, with joinable structures and can be fully disassembled.

CONSTRUCTION LIMITATIONS

- The robot must fit inside a box measuring **30cm x 30cm x 30cm**.
- Maximum weight limit: **3000 ± 100 grams**.
- There is no limit to the number of electronic components used.
- For insulation of exposed or damaged wires and electronic components prone to short-circuiting, **insulating tape** or **heat shrink tubing** may be used.

- Elastic bands and third-party rubber bands are allowed if they are used for **movement or mechanical functionality**. They cannot be used mainly to bind parts together or interfere with an opponent's robot. For example, using a rubber band as a mechanism to move a weapon is allowed. Wrapping armor in rubber bands is not allowed. Another example: using string to block an opponent's internal mechanisms is **not** allowed. Rubber bands **must be real rubber bands** – not hair ties or bungee cords.

- **Metal parts are allowed** for the body and outer shell: screws, nuts, blades, nails, frames, etc. Screws can be used to fasten and attach parts together.

- Metal components are permitted – for example, if your robot is built on an Arduino platform, the entire frame can include metal materials. Screws (self-tapping) may be used to connect structural elements. Every part must be joined using engineering logic and allowed components.

- **Glass is not allowed** – either as part of the outer shell or inside the robot.

- If a robot advances to the next competition stage, it may undergo **technical maintenance and repairs**, provided that all above requirements continue to be met.

In summary, in 2025, **almost all restrictions on robot design have been lifted**. You may use **any material** (metal, carbon, plastic, wood, etc.) and **any form of connection**, as long as it complies with the rules stated above.

Couple of examples:

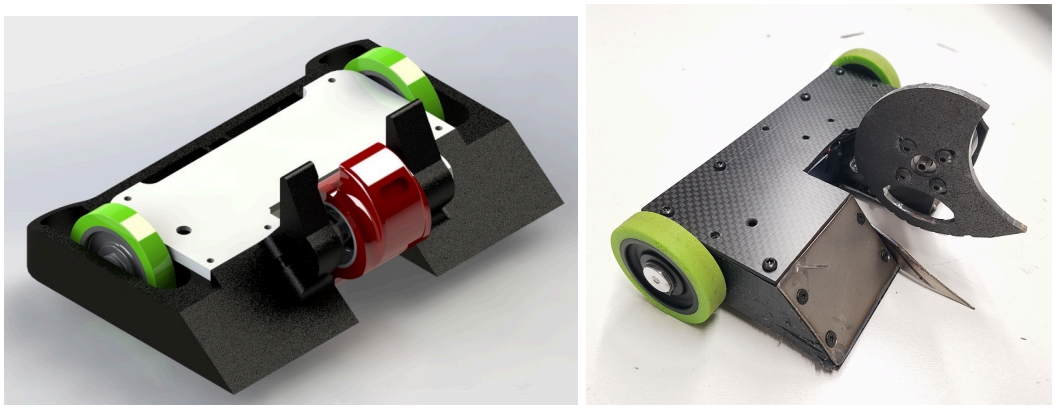

Figure 1. The robots shown above are eligible for participation.

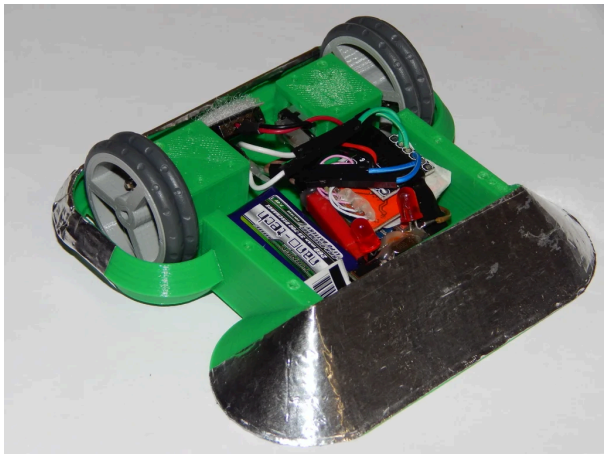

Figure 2. This robot is not eligible for participation – exposed design (battery and wires).

WEAPON EQUIPMENT

Robots are REQUIRED to have an active weapon capable of inflicting damage on the opponent.

Prohibited weapons include, but are not limited to:

- Fire, heat-based weapons, or any weapons intended to alter the opponent's temperature.
- Liquids.
- Magnets.
- Devices intended to interfere with the radio signal between the controller and receiver.
- Devices designed to obscure or blind the opposing team's operators.
- Devices aimed at entangling or immobilizing any part of the opponent, including nets, detachable harpoons and tow cables, or debris intentionally dropped onto the arena such as ball bearings or pins.
- Devices deliberately intended to damage the arena.

Robots MUST have an active weapon. An active weapon is defined as:

- Powered independently of the robot's drivetrain.
- Specifically designed to disable or defeat opponents through mechanical action.
- Must be operator-controlled and remotely activated (automation is permitted but must be overrideable by the operator).
- Any type of weapon (e.g., pneumatic, spinning, etc.) is allowed, except those listed as prohibited above.
- Metal is allowed as a striking/contact weapon.

VISUAL APPEARANCE

1. **Participants MUST use pigments or decals to decorate their robot.** These decorations must not cover any seams or joints in a way that interferes with the robot's structural separation. For example, if a decal covers two or more parts, it must be cut along the seams to preserve separation visibility.
2. **Robots must be visually themed to represent a school, country, or region**, or any other symbol **that does not include political or religious messaging**.

COMPETITION RULES

GENERAL CONDITIONS

- By placing their robot in the arena, the operator and/or robot owner acknowledges that opponents and event organizers are not responsible for any damage or broken components that may occur during the battle.
- Once a competing robot is placed in the arena, its configuration cannot be changed beyond its default setup. Only drivetrain and connectivity functions can be adjusted at that point.

- Operators/owners bear full responsibility for their robots.

- Tournament organizers reserve the right to disqualify a robot from competition due to safety concerns, unsportsmanlike behavior, or any other justified reason.

- Building a combat robot can be dangerous (yes, even one made from plastic toy bricks). You are responsible for your own safety and that of others.

ARENA

- The arena will be enclosed and measure **2.5m x 2.5m**.

- It will feature reinforced lower barricades around the interior to prevent direct weapon impact on the walls.

- The arena **may include hazards and obstacles** hidden beneath the floor or along the edges. These features may damage your robot if approached carelessly.

TOURNAMENT FORMAT

- **Details on the battle format and tournament bracket will be shared one day before the competition.**

FAIR PLAY RULES

- In good sportsmanship, operators should exercise restraint and avoid inflicting excessive or unnecessary damage, especially when the opponent is being counted down for a knockout.

- Participants must not intentionally target exposed batteries lying on the arena floor. Deliberate targeting may result in immediate disqualification (accidental hits are not penalized).

- Remember, this tournament is organized as an entertainment event for spectators and hosts. Be respectful of everyone present — including your

competitors and the audience.

- Organizers may allow participants to compete even if their robots do not fully meet every listed construction criterion. However, participants are strongly encouraged to do their best to design exciting and competitive matches.

- Our ultimate goal is to entertain the audience and promote the sport of robot combat.

- Any individual or organization adapting these rules is responsible for interpreting and enforcing them.

Robot Safety & Compliance (additions)

- **Batteries:** hard case or protected pack; terminals insulated; charging only in **LiPo-safe bags** in designated areas; no charging unattended.

- **Weapons: No projectiles** of any kind (no launching parts, fluids, powders; certified pressure vessel only.

- **Control & failsafe: hard kill-switch** accessible from outside; radio failsafe must cut drive and weapon on signal loss.

- **PPE & pits:** Safety glasses required in pits/arena; no live weapon testing outside the test box; follow tool-use and soldering safety rules.

- **Inspection:** Pass **Pre-Flight Tech Inspection** before first match; non-compliant bots must remedy issues before competing.
- **Maintenance:** Bring all tools and potentially needed spare parts with you.

Code of Conduct

We maintain a safe, respectful environment. Harassment or unsafe behavior may result in removal from the event. Report concerns to the event desk immediately.

Power & Tools

Venue power: **220 V, Type C/F sockets**. Bring adapters and surge-protected power strips if needed.

Customs & Packing Tips

Carry LiPo batteries in cabin luggage with terminals taped; bring purchase/tech notes if asked; pack blades/tools in checked baggage with guards; print your invitation letter.