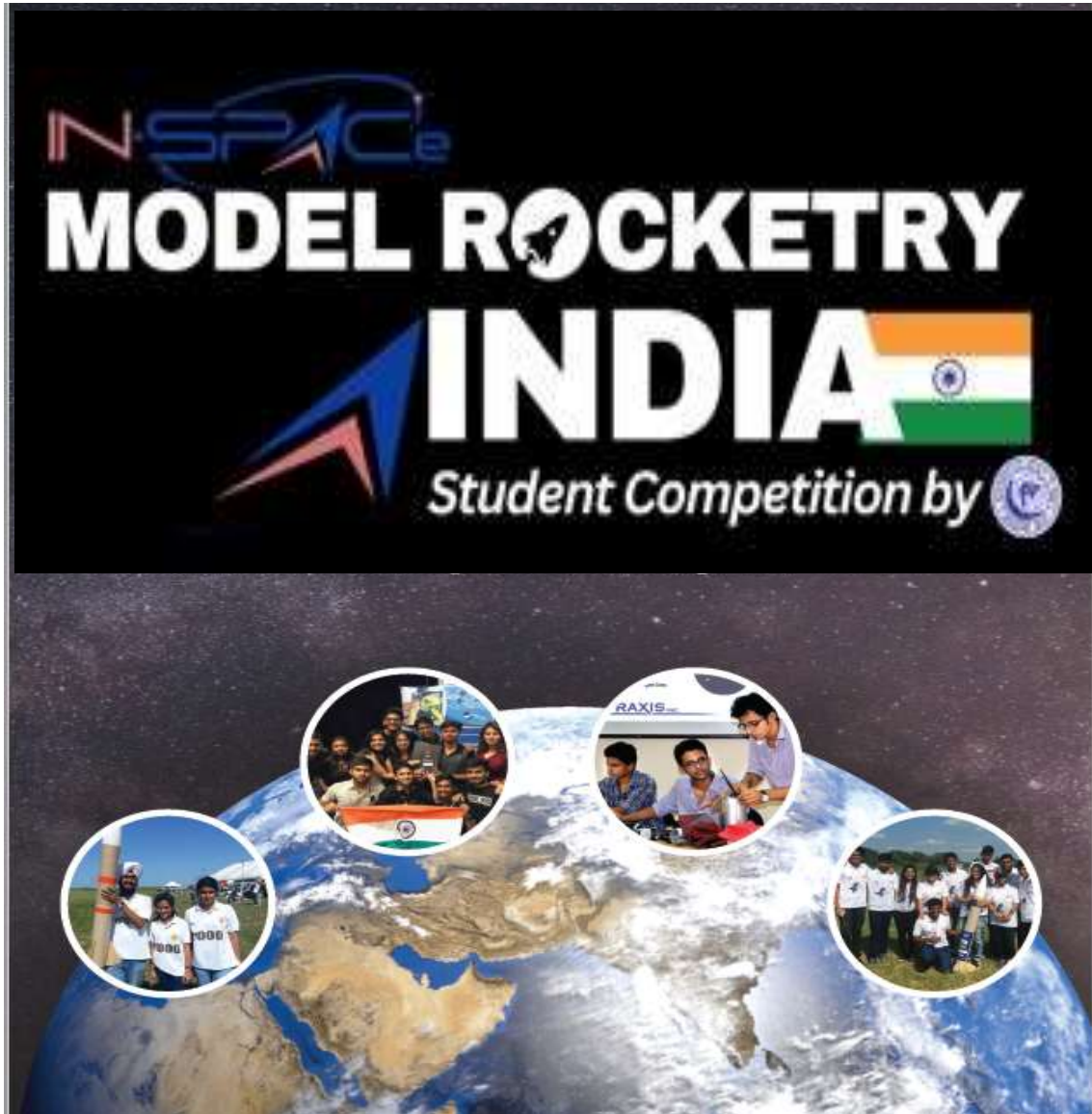




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IN-SPACe Model Rocketry India Student Competition 2024-25: Registration, Guidelines Document

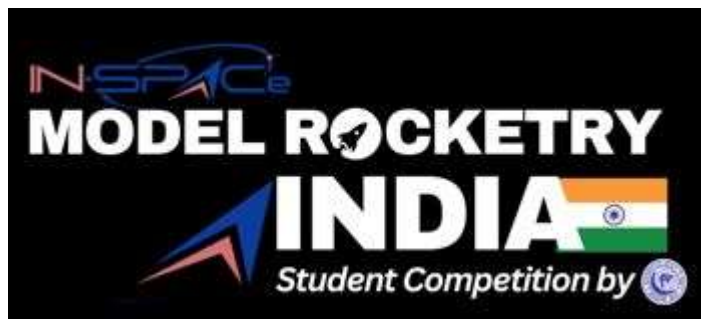
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ASTRONAUTICAL SOCIETY OF INDIA
U. R. Rao Satellite Centre
Bengaluru 560017



IN- SPACe
Model Rocketry India Students Competition
2024-25
by
ASTRONAUTICAL SOCIETY OF INDIA
Registration Guidelines Document



June 2024

ASTRONAUTICAL SOCIETY OF INDIA
U. R. Rao Satellite Centre
Bengaluru 560017
<https://www.asindia.org>



1. INTRODUCTION

IN-SPACE Model Rocketry India Student Competition 2024-25 is being organized by Astronautical Society of India in association with ISRO. This competition is aimed to provide a realistic experience to students and start-ups, in designing and launching an amateur rocket that meets a specified set of mission requirements. The competition involves the design, development & launch of a Model Rocket carrying a payload of 1Kg mass to an altitude of 1000m above the launch site, along with safe ejection of the payload and safe landing of the rocket. The participants are expected to learn basics of Rocketry, along with soft skills like team building, co-operation, project management, and interpersonal communication skills, among others. During the competition, the participants shall experience the engineering processes for realizing an amateur rocket, and compete with peers from all across the country, with an opportunity to participate in a National level final planned during March-June 2025. The competition is open to all Undergraduate Student teams comprising of Engineering / Science Streams in India. The place of competition will be communicated in due course of time.

The purpose of the program is to inspire and excite students about learning and exploring careers in Science, Technology, Engineering and Mathematics. The competition is defined to be well within the capabilities of the students, and the respective colleges are encouraged to conceive academic credits / any other incentivizing mechanism for students who participate in the competition. Additionally, the faculty and mentors shall guide students during the various phases of model rocketry competition.

The student teams shall have the opportunity to participate in IN-SPACE short-term skill development course on Model Rocketry being planned during the course of competition. This course shall be designed for familiarizing the students on various practical aspects of Model Rocketry.

2. COMPETITION objective

- 1) To inculcate consciousness about amateur model rocketry across the country.
- 2) To inspire students about learning and careers in science, technology, engineering and mathematics



- 3) To develop a technologically skilled future workforce for Space Sector in India

3. Registration Guidelines

- 1) The competition is open to all undergraduate students from Engineering / Science background enrolled in Indian colleges/universities
- 2) Applicants shall apply for the competition in teams and the team applying for the competition shall have a minimum of 5 members and shall not exceed 8 members.
- 3) Only 1 team is allowed per college/university. For colleges that are affiliated to a university one application from each of the affiliated colleges is allowed.
- 4) Additionally, the Undergraduate Student team can have 1 faculty coordinator/advisor and up to 2 mentors who could be the graduate students enrolled in the university's higher education courses or faculty or the alumni of the institution. If there is no mentor than the faculty coordinator/advisor shall act as mentor.

The role of the faculty coordinator/advisor is to:

- ✓ Act as a point of contact for the team, both with the university and ASI
- ✓ Assist teams with logistics such as arranging conference rooms, lab resources etc.
- ✓ Providing general guidance throughout the competition.
- ✓ The faculty advisor shall not make design decisions or direct recommendations or participate in more than an oversight role during reviews.

The role of the mentor is to:

- ✓ Act as a liaison between the team and the competition committee. The mentor will be responsible for scheduling all competition reviews and coordinating all communications with the team. Mentors are also responsible for tracking the team's progress throughout the competition.
- ✓ Team mentors shall be available to answer questions and provide general guidance.
- ✓ The mentor shall not provide design recommendations.



- 5) The team applying for the competition must provide an approval letter from the institution consisting of the details of all the team members including the name, Institute ID, course enrolled in branch, year of graduation and the role in the Team (roles can be defined as per the tasks assigned to the team members) on the institute's letterhead duly signed by the head of the institution. The scanned copy of the letter shall be attached with the registration form. (Approval letter template can be downloaded from IN-SPACE website: www.inspace.gov.in)

Last Date to Apply: June 30, 2024

- 6) In case of any changes in the team after the registration, an official request shall be made by the faculty coordinator/advisor regarding the same to director-pd@inspace.gov.in / asindia.org@gmail.com with a subject line: Team Change Request IN-SPACE Model Rocketry Competition. No change shall be permitted post PDR.
- 7) **Additional details:**
- ✓ After the registration timeline is complete, participants will be provided with a mission requirement document for the Model Rocketry competition, in due course.
 - ✓ The participants will be required to submit preliminary design review document (PDR) along with a non-refundable participation fee of Rs. 5,000/- (Rupees Five Thousand Only), to be paid to Astronautical Society of India.
 - ✓ The PDR qualified teams shall undergo a one-week IN-SPACE short-term skill development course on Model Rocketry. This course will have hands-on practical sessions to design, develop and launch the scaled down version of amateur model rockets. The registration and payment details for this course shall be communicated by IN-SPACE in due course of time. Only two participants will be permitted to attend this course per team.



- ✓ Post workshop teams will have to pay a non-refundable fee of Rs. 25,000/- (Rupees Twenty Five Thousand Only), to be payable to ASI India to participate further in the competition.
- ✓ Post the Model Rocketry Workshop, the participating teams will be required to submit a Comprehensive Design Review (CDR) document within a specified period. The teams shall keep in mind that the maximum cost of the Launcher cannot exceed Rs. 1,50,000/- (Rupees One Lakh Fifty Thousand Only), the break-up of which including the development, material, test and validation cost, along with other applicable line items shall be included in the CDR document, and presented. The usage of “Make in India” components will be given due weightage during the evaluation.
- ✓ The CDR qualified teams shall be permitted to launch their rockets subject to successful completion of mission/flight readiness review. The organizing committee can undertake visits to the colleges / labs at any stage of the competition.
- ✓ After the CDR the jury will check the Launchers for the flight readiness during the Flight Readiness Review and launch dates will be given to the teams.
- ✓ In the final stage, rockets will be launched and after the Post Flight Analysis (PFA) of the launchers, along with physical inspection of the recovered launchers, winners will be decided.
- ✓ The teams are advised to generate marketing pitches and collect sponsorships for participating in the competition. The sponsorship amounts such received, along with the cost break-up shall be included and presented during the Critical Design Review phase. The qualified teams’ details will be displayed on the IN-SPACE / ASI website.
- ✓ The details of the payload, along with the specific dimensions, and other requirements shall be included in the Mission Requirements and PDR Guideline Document that will be released in due course.



4. Competition timeline

The tentative timeline for the IN-SPACE Model Rockery India Competition 2024 – 2025 is provided below:

Table 1: Competition Timeline (Tentative)

S. No.	Activity	Start Date	End Date
1.	Registration	06-06-2024	30-06-2024
2.	Mission Requirements and PDR documentation Guidelines Release	01-07-2024	15-07-2024
3.	PDR Document Submission	16-07-2024	31-08-2024
4.	Preliminary Design Review Completion	01-09-2024	30-09-2024
5.	Hands-on Workshop	01-10-2024	30-10-2024
6.	Critical Design Review Submission	01-11-2024	30-11-2024
7.	CDR Evaluation	01-12-2024	31-12-2024
8.	Flight Readiness Review & Competition	01-04-2025	30-04-2025
9.	Post Flight Review and Results Declaration	After Completion of competition	

NB: Please visit www.inspace.gov.in for registration and further details