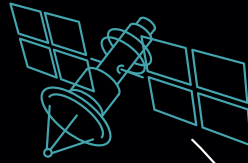
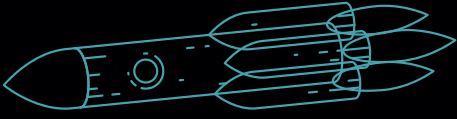


World Space  
Week OCTOBER 4-10



**in orbit**  
spacestation  
designchallenge

2<sup>nd</sup> November 2000, that was the last date that all living humans were together here on Earth!

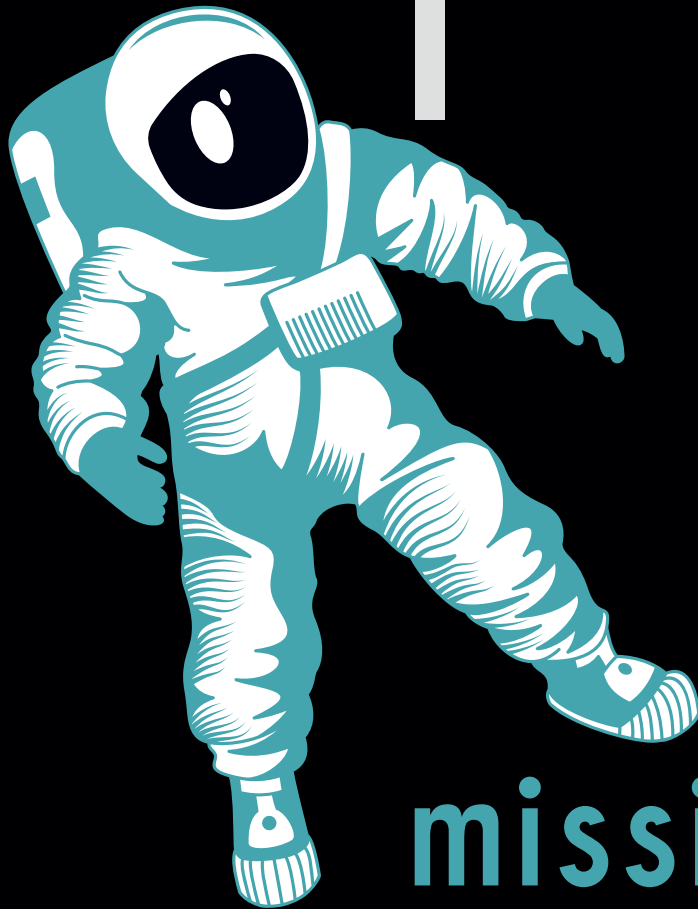
Since then there has always been someone onboard the International Space Station (ISS).

With mankind's never ending curiosity and determination, the ISS unlocked new doors to discoveries that would never have been possible on Earth!

Here's your chance to design a brand new space station!



in  
**orbit**  
space station  
design challenge



## your mission

Give wings to your curiosity! Embark on a quest to fly without wings! Let those ideas flow free!

Design a Space Station in Earth orbit with facilities promoting scientific experiments and on-orbit operations.

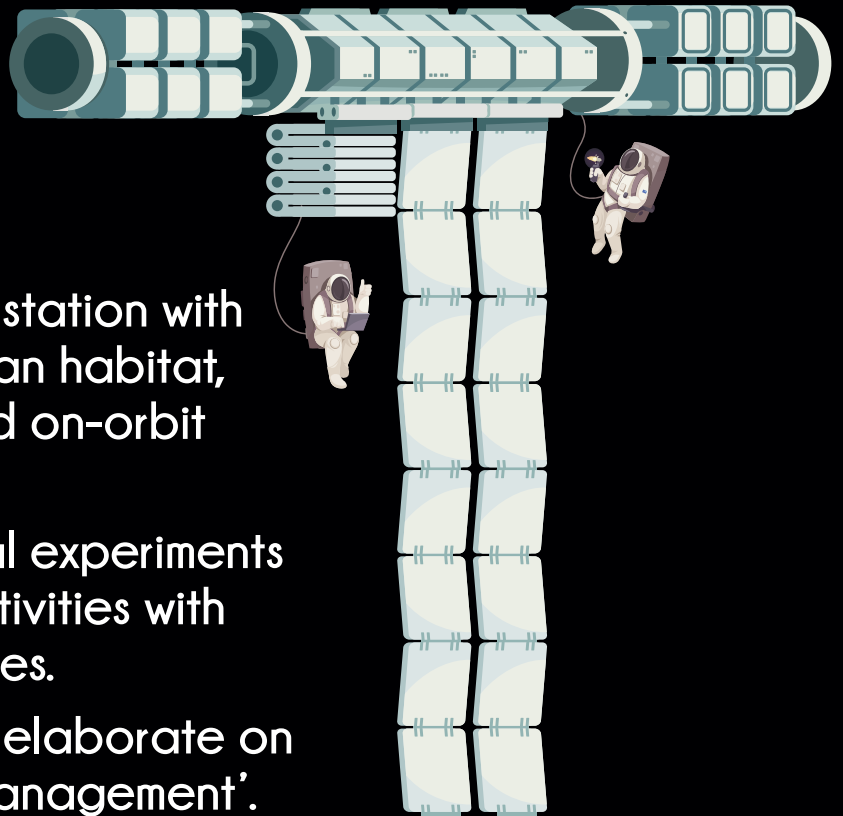
## the rules

---

1. 'In-Orbit' is a team event open to students studying in Kerala.
2. The event will have two categories,
  - Juniors - Class VIII to XII
  - Seniors - College students
3. A team can have 3 to 5 members from the same institution.
4. Authorization letter from the Head of Institute is mandatory for registration.
5. Event will be held in two rounds.
6. 5 teams from each category will be selected from prelims for the final round.
7. Orientation sessions will be arranged for all registered teams to help you with the task.

# things to do

1. Design a space station with modules for human habitat, laboratories and on-orbit operations.
2. Identify potential experiments and on-orbit activities with definite objectives.
3. Seniors need to elaborate on 'space debris management'.

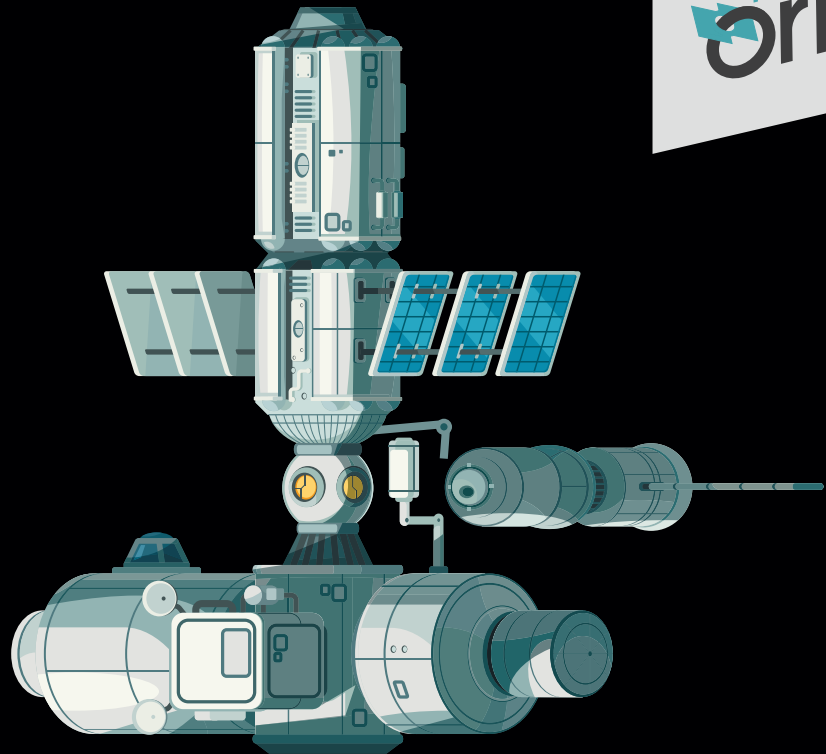


## Preliminary Round

- Submit a report on your design and ideas in not more than 30 pages (< 20 MB).
- Originality in content will be appreciated. Mention sources wherever applicable.

## Final Round

- Selected teams from each category will make online presentations to expert panel.
- Each presentation shall be of 30 minutes duration.



# ↑ space station design

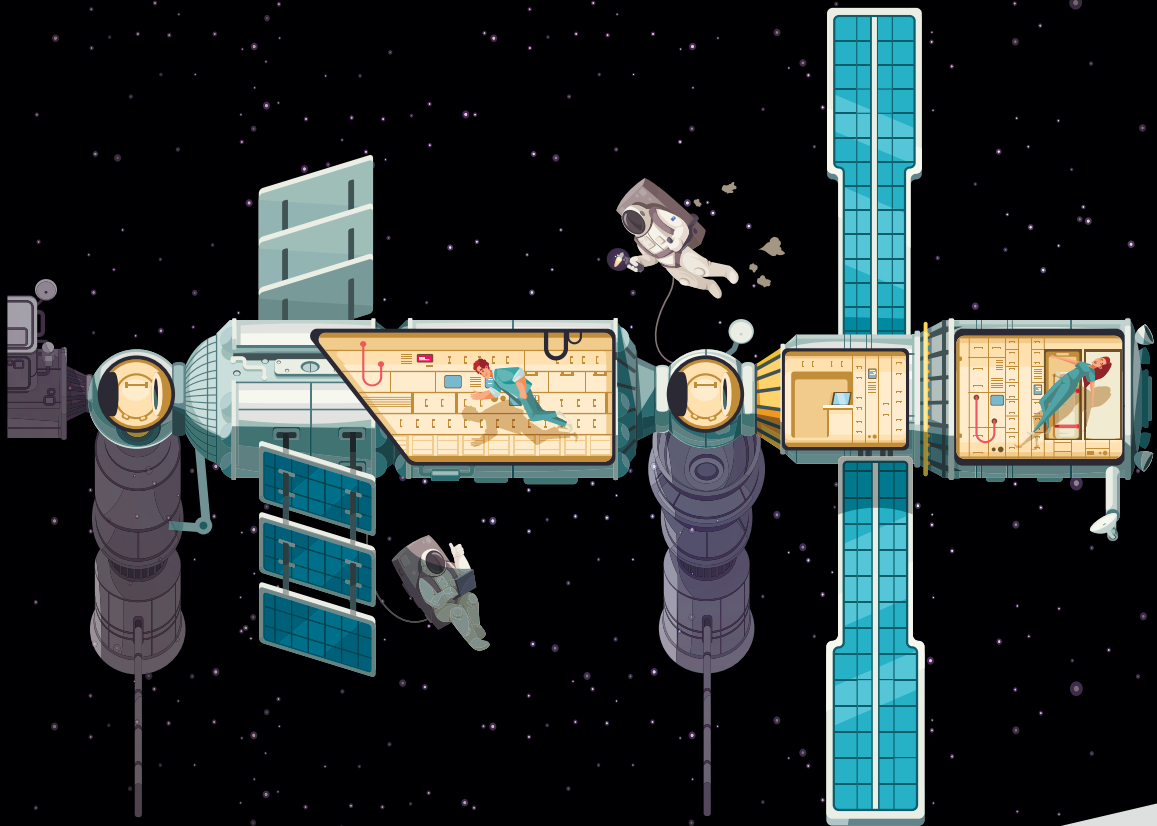
for junior &  
senior categories

## Your Challenge

To design and assemble essential station modules. Add specific modules to support crew in experiments and operations.

## Something to get you Thinking

- Identify essential elements
- Preliminary sizing and mass estimation
- Transporting goods to orbit - select transportation system
- Station building - assembly



in  
orbit

# on orbit activities **2**

for junior &  
senior categories

## Your Challenge

To identify on-orbit activities and make implementation strategies.

## Something to get you Thinking

- Space tourism
- Space manufacturing
- Spacecraft servicing & refueling
- Microgravity experiments
- Rendezvous & docking

The background of the slide is a dark, black space filled with numerous grey, irregularly shaped objects of various sizes, representing space debris. A vertical white bar is on the left side of the slide.

# 3 space debris management

only for  
senior category

## Your Challenge

Space debris is a huge threat to space missions. The amount of space debris is increasing at an alarming rate. So your task is to prevent debris formation and provide strategies to remove the existing debris.

## Something to get you Thinking

- Space debris collision avoidance
- Strategies for debris prevention
- Active debris removal - Propose novel techniques



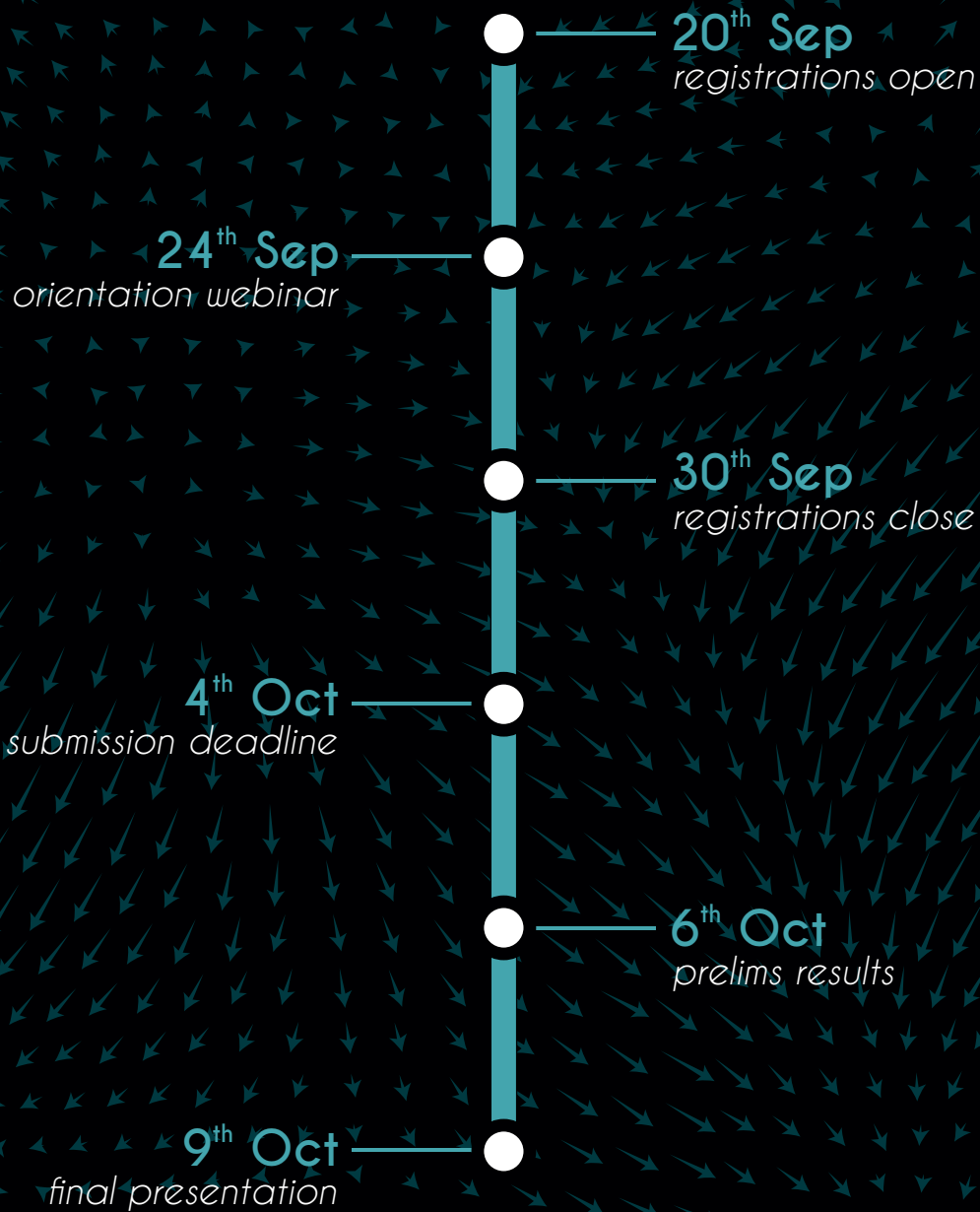
# how to participate



## Note

1. Identify a Suitable Name for your Team.
2. Registration shall be done using the Gmail ID of the team leader.
3. Signed authorisation form from your institution must be uploaded as part of registration.  
(Download form from inorbitsw.com)
4. Report shall be submitted in pdf format (file size < 20 MB).
5. All further communication will be through the registered Gmail ID.

# the timeline



# reach US

✉ [wswchallenge@vssc.gov.in](mailto:wswchallenge@vssc.gov.in)

☎ 8547590017

register at  
[inorbitwsw.com](http://inorbitwsw.com)  
or  
[wswweek.vssc.gov.in](http://wswweek.vssc.gov.in)

in orbit  
space station  
design challenge



Technical Challenge Committee  
World Space Week 2022  
Vikram Sarabhai Space Centre  
Thiruvananthapuram