TUNSA SPACE SUMMER SCHOOL

SPACE ROBOTICS WORKSHOP

Guidebook

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WORKSHOP PLAN

Time	Activity	Duration
10:00-10:15	Conference: Introduction to Space Robotics	15 min
10:15-10:30	Workshop Presentation: Exploring Space Robots	15 min
10:30	Guidebook Distribution	
10:30-10:35	Team Division	5 min
10:35-11:00	Coffee break	25 min
11:00	Presentation Template Distribution	
11:00-11:50	Research Phase	50 min
11:50	Presentation Submission Form Opens	
11:50-12:30	Presentation Preparation	40 min
12:30	Presentation Submission Deadline	
12:30-12:45	Practice and refinement	15 min
12:45-13:00	Live Pitch	15 min
13:00-13:10	Scoring & Winner Announcement	10 min
13:10-13:15	Q&A & Feedback	5 min

In this Guidebook, we will explain:

WORKSHOP RULES

TIPS & TRICKS

TASKS & SCORING

01

Workshop Rules

WORKSHOP BEHAVIORAL RULES

- **Respect and Collaboration**: Treat fellow students, mentors, and organizers with respect. Collaborate effectively within your group.

- **Device Sharing**: Share devices (laptops, tablets, smartphones) within your group if some members do not have access to one. Ensure equal participation.

- **Attendance**: Attend all workshop activities promptly. Notify organizers if you have to leave temporarily.

- **Conflict Resolution:** Address any conflicts within your group calmly and constructively. Seek help from mentors if needed.

WORKSHOP ENVIRONMENTAL RULES

- **Quiet Workspace**: Maintain a quiet and focused workspace in the classroom to respect your peers' concentration.

- **Environmental Responsibility:** Keep your workspace clean and organized. Dispose of trash properly.

- **Respect Time Limits**: Adhere to the allocated time limits for breaks, research, and practice sessions to optimize workshop productivity.

- **Internet Usage**: Use the internet responsibly for research purposes only. Avoid distractions and non-work-related websites.

02

Tips & Tricks

to make this a successful
workshop!

GENERAL TIPS

- **Mentor Interaction**: Respect your mentor's guidance and insights. Ask questions when in doubt and be open to their assistance.

- **Participation and Engagement**: Actively participate in discussions, Q&A sessions, and reflections. Share your insights and learn from others.

- **Feedback**: Provide constructive feedback to your peers and accept feedback graciously. It helps everyone improve.

RESEARCH TIPS

- **Effective Keyword Selection**: When searching for information online, choose specific keywords related to your assigned space robot. For example, if your robot is designed for Mars exploration, use keywords like "Mars rover technology," "Mars rover mission objectives," or the robot's specific name.

- **Advanced Search Operators**: Utilize Google's advanced search operators to refine your results. For instance, use quotation marks (" ") to search for an exact phrase or minus sign (-) to exclude specific terms. For example, "Mars rover" -Curiosity will help you find information about Mars rovers other than Curiosity.

- **Explore Official Sources**: Look for information on official space agency websites such as NASA, ESA, JAXA, or ISRO. These sources often provide detailed technical documentation, mission updates, and press releases that can be valuable for your research.

- **Video Summarization Tools**: To quickly grasp the key points of a lengthy video, consider using video summarization tools like "Kapwing" or "InVideo." These tools can provide concise summaries of video content, saving you time.

- **Text Summarization Tools**: Use online text summarization tools like "SMMRY" or "SummarizeBot" to extract the main ideas and key details from lengthy articles or research papers.

- **Boolean Logic**: Employ Boolean operators (AND, OR, NOT) to enhance your search results. For example, "Mars rover AND technology" will help you find articles that discuss both Mars rovers and their technologies.

PRESENTATIOON TIPS (I)

- **Presentation Etiquette**: During live debates, adhere to good presentation practices, such as clear speaking, time management, and effective communication.

- **Clear and Concise Slides**: Keep your presentation slides clear and concise. Avoid cluttering slides with excessive text or graphics. Each slide should convey one key point.

- **Visual Aids**: Use visuals such as images, diagrams, and infographics to illustrate complex concepts. For example, include a labeled diagram of your space robot's components.

- **Bullet Points:** Present information using bullet points or numbered lists for easy readability. Use these lists to highlight key features or specifications.

- **Practice Delivery:** Rehearse your part of the presentation multiple times to ensure smooth delivery. Practice speaking clearly and confidently.

PRESENTATI0ON TIPS (2)

- **Time Management:** Allocate a specific amount of time for each aspect of the space robot you're discussing. We have included a recommended time for each section in the table of tasks.

- **Storyboarding**: Plan the flow of your presentation with a storyboard. This helps ensure a logical sequence of information and smooth transitions between speakers.

- **Cite Your Sources**: Properly cite your sources within your presentation. Include a slide at the end with a list of references and links to the articles or websites you used.

- **Use Presenter Notes**: If you are using presentation software like PowerPoint, utilize presenter notes to jot down important reminders or talking points to keep you on track during your segment.

RECOMMENDED RESEARCH WEBSITES

Google	https://www.google.com
Wikipedia	https://en.wikipedia.org/wiki/
YouTube	https://www.youtube.com/
European Space Agency	https://www.esa.int/
NASA Mars Exploration	https://mars.nasa.gov/
NASA Solar System Exploration	https://solarsystem.nasa.gov/
NASA Space Place	https://spaceplace.nasa.gov/
Phys (News)	https://phys.org/
Space (News)	https://www.space.com/
eoPortal	https://www.eoportal.org/
National Air and Space Museum	https://airandspace.si.edu/
NASA Jet Propulsion Laboratory	https://www.jpl.nasa.gov/
Keck Institute for Space Studies	https://kiss.caltech.edu/
MDPI (Research Papers)	https://www.mdpi.com
Google Scholar (Research Papers)	https://scholar.google.com/
Semantic Scholar (Research Papers)	https://www.semanticscholar.org/
Research Gate (Research Papers)	https://www.researchgate.net/
IEEE Xplore (Research Papers)	https://ieeexplore.ieee.org/Xplore/home.jsp

WORKSHOP TASKS

01 Introduction (30s)

- Begin with an attention-grabbing opening statement about humanity's fascination with space exploration.
- Introduce the rover's destination planet and its significance in the solar system.
- Briefly outline the main objectives of the presentation

02 Mission Objectives (45s)

- Highlight the primary goals of sending the rover to the planet.
- Emphasize scientific discoveries, such as studying the planet's geology, atmosphere, and potential signs of life.
- Most importantly, mention how the mission contributes to our understanding of the universe.

03 Rover Design and Technology (60s)

- Describe the rover's physical design, including its size, shape, and mobility mechanisms.
- Explain the advanced technology onboard, such as cameras, spectrometers, and sample collection tools.
- Highlight how these technologies enable the rover to perform its tasks remotely.

04 Challenges of Interplanetary Travel (45s)

- Discuss the difficulties of sending a rover to another planet, including the vast distance, communication delays, and harsh space environment.
- Mention the innovative solutions used to ensure the rover's safe arrival and functioning on the planet's surface.

05 Landing and Deployment (45s)

If the rover has not been deployed yet:
- Explain the future plans of landing the rover on the planet
- Explain the deployment process
If the rover has already been deployed:
- Explain the landing process, from atmospheric entry to touchdown, using techniques like parachutes or thrusters.
- Describe the steps taken to safely deploy the rover onto the planet's surface.

06 Prototyping and Mission Readiness (60s)

- Discuss the preparation and testing stages on Earth before launching the rover.
- Explain the rigorous testing procedures, including simulations and prototypes.
- Highlight the importance of mission readiness and potential challenges faced during testing.

07 Future Implications (45s)

- Discuss how the insights gained from this mission can shape future space exploration endeavors.
- Touch upon possibilities such as human colonization, resource utilization, or follow-up missions.
- Conclude with a sense of wonder and excitement about the ongoing exploration of the cosmos.

08 Conclusion (15s)

- Summarize the key points of the presentation.
- End with an inspiring statement about the importance of pushing the boundaries of knowledge and exploration.

WORKSHOP SCORING

Collaboration	3 pts	Mission Objectives	1 pt
Time Management	3 pts	Rover Design and Technology	3 pts
Behavior	2 pts	Challenges of Interplanetary Travel	2 pts
Presentation Quality	2 pts	Landing and Deployment	3 pts
Public Speaking	3 pts	Prototyping and Mission Readiness	3 pts
Overall Success of the Pitch	3 pts	Future Implications	2 pts