

EXPEDITION MARS JOB DESCRIPTIONS AND RESPONSIBILITIES



BIOLOGY

BIOLOGY (BIO) TEAM

Job Description:

Collect data about organisms and environmental factors that impact space exploration. Test soil to determine if microbes are present. Swab surfaces in the spacecraft for signs of bacteria.

Areas of Interest:

- Environmental science
- Life sciences (plants, animals, organisms)

Career Connections:

- Biologist
- Environmental researcher
- Botanist



ROBOTICS

ROBOTICS (BOT) TEAM

Job Description:

Test the capabilities of the robotic arm and examine Martian rocks. Programs the ROV by coding safe pathways. Identify potential dig sites on the Martian surface.

Areas of Interest:

- Engineering design
- Problem-solving and troubleshooting

Career Connections:

- Mechanical Engineer
- Software Engineer



COMMUNICATIONS

COMMUNICATION (COM) TEAM

Job Description:

Communicate messages between the Spacecraft and Mission Control. Relay critical messages to crew members throughout the mission. Locate and reprogram communication satellites.

Areas of Interest:

- Leadership role-comfortable with quick thinking and decision-making
- Satellite communications and systems

Career Connections:

- Communication Engineer
- Information Technologist

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GEOLOGY

GEOLOGY (GEO) TEAM

Job Description:

Conduct tests on Martian rocks and minerals. Record and analyze observations. Research and map possible dig sites on the Martian surface.

Areas of Interest:

- Geology (rocks, minerals, and their interaction with the Earth)
- Land and water resources and processes

Career Connections:

- Geologist
- Environmental Engineer



LIFE SUPPORT

LIFE SUPPORT (LS) TEAM

Job Description:

Maintain the life support systems on the spacecraft by monitoring air and water quality. Respond quickly to issues to ensure safe conditions for all members aboard the spacecraft.

Areas of Interest:

- Engineering design
- Hands-on experimentation and troubleshooting with lab materials

Career Connections:

- Industrial or Systems Engineer
- Chemist



MEDICAL

MEDICAL (MED) TEAM

Job Description:

Conduct medical tests on the crew to ensure their health and safety, including monitoring vital signs and radiation exposure.

Areas of Interest:

- Human anatomy and physiology
- Nutrition, exercise and health

Career Connections:

- Nurse or Doctor
- Emergency Medical Technician (EMT)
- Nutritionist

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NAVIGATION

NAVIGATION (NAV) TEAM

Job Description:

Calculate fuel levels and plot the course for the Spacecraft. Perform critical pre-flight checks. Navigate the spacecraft between Phobos and Mars.

Areas of Interest:

- Flight paths and orbits of celestial bodies.
- Satellite communications and systems

Career Connections:

- Pilot
- Aerospace Engineer
- Mathematician



REMOTELY OPERATED VEHICLE

REMOTELY OPERATED VEHICLE (ROV) TEAM

Job Description:

Collaborate to build, test, and troubleshoot the remotely operated vehicle (ROV). Install critical components and retrieve data.

Areas of Interest:

- Engineering design
- Hands-on experimentation and troubleshooting with lab materials

Career Connections:

- Computer Scientist
- Mechanical Engineer
- Electrical Engineer



WEATHER

WEATHER (WX) TEAM

Job Description:

Research and learn about celestial objects. Monitor the Martian sky, track objects, and calculate trajectories. Track and observe dust storms on the Martian surface.

Areas of Interest:

- Meteorology
- Analyzing data and tracking information

Career Connections:

- Meteorologist
- Astronomist