# **CREW MANIFEST MISSION: Expedition Mars**

Mission Date: Mission Time: # of Students: \_\_\_\_\_\_\_\_\_ Grade: \_\_\_\_\_\_\_\_\_

Teacher’s Name(s): School:

Please bring two (2) copies of this completed **CREW MANIFEST** with you on the day of the mission. Instructions for completing this form are provided on page 2. ***\*Required to fly Expedition Mars***

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|  | TEAM | MISSION CONTROL CREW | | MARS TRANSPORT VEHICLE CREW | |
| 1 | **COM***Communications* | | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 2 | **NAV**  *Navigation* | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 3 | **ROV** *Rover* | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 4 | **Weather** *Weather* | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 5 | **MED***Medical* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 6 | **BIO** *Biology* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 7 | **BOT** *Robotics* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 8 | **LS** *Life Support* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 9 | **GEO** *Geology* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |

# **Customize Your Crew MISSION: Expedition Mars**

The crew is customizable based upon the number and talents of your students. We recommend filling in the teams in a manner that fits the strengths of your students and teaching objectives.

To start, review the team descriptions on page 3. This will provide you with details needed to place your students on the most appropriate team. Then follow the guidelines below for completing the crew form on page 1.

Usually, each team includes at least one student on the Mission Control Crew and one student on the Mars Transoport Vehicle (LTV) Crew.

* Place one student on each crew – Mission Control and LTV -- for each team. (Ex: Place one student on the COM team in Mission Control, and one on the COM team in the LTV.)
* Once you have assigned one student to the 9 teams of both crews (18 students in total) go back and assign a second student to the other slot for each team. These students will work as partners.
* NOTE: If you have a smaller class but know some students will need the help of a partner, it is okay to pair up some students and leave some jobs empty. Just make sure each starred (\*) job has at least one person in the LTV and one in Mission Control.
* Remember each team in the Mission Control Crew must have a corresponding team member in the LTV Crew.

If you have questions about completing the Crew Manifest, please contact us at [info@clcstlouis.org](mailto:info@clcstlouis.org) .

# **TEAM DESCRIPTIONS MISSION: Expedition Mars**

Review each of these job descriptions to familiarize yourself with the type of work being conducted during the mission.

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|  | TEAM | DESCRIPTION | JOB TITLES |
| 1 | **COM** *Communications* | * Provide communications support between astronauts and Mission Control * Discover and reprogram missing communication satellites * Key skills: Comfortable reading out loud; multi-tasking | Communications Engineer  CAPCOM |
| 2 | **NAV**  *Navigation* | * Calculate and plot the course for the Spacecraft to reach and navigate to Mars from Phobos * Perform critical pre-flight checks to ensure the MTV is ready to fly * Key skills: Understanding written and oral instructions; perseverance | Pilot  Commander |
| 3 | **ROV** *Rover* | * Build and test a remotely operated vehicle (R.O.V.) to search Mars for signs of water, installing critical equipment and components and retrieving data * Key skill: Strong oral communication; dexterity | Mechanical Engineer  Electrical Engineer |
| 4 | **Weather** *Weather* | * Locate a missing satellite and track other objects in the Martian sky * Track and observe dust storms on the Mars surface * Key skill: Observation | Space Weather Forecaster  Meteorologist |
| 5 | **MED** *Medical* | * Monitor the health of the crew with a focus on radiation * Run various diagnostics on different team members, blood pressure, monitoring radiation, and heart rate * Key skill: Comfortable interacting with crewmates | Doctor  Nurse |
| 6 | **BIO** *Biology* | * Testing soil to determine the presence or absences of microbes * Checking the spacecraft for signs of beneficial or harmful bacteria * Key skill: Following written instructions | Biologist |
| 7 | **BOT** *Robotics* | * Examine different Martian rocks through the use of robotic arms * Execute basic programs for unmanned rovers to gather their payloads * Key skill: Spatial reasoning | Computer Scientists  Mechanical Engineer |
| 8 | **LS** *Life Support* | * Work hand in hand with their peers to ensure safe conditions for all team members on the spacecraft * Manage life support emergencies as they emerge * Key skill: Compiling data from many sources | Systems Engineer  Technical Specialist |
| 9 | **GEO** *Geology* | * Examine different Martian rocks for key elements and minerals * Research and map possible dig sites for important minerals * Key skill: Spatial reasoning; observation | Geologist |