**1. Title Page**

* **Mission Name:** e.g., "Mars Exploration Rover Mission."
* **Subtitle:** High-level description (e.g., "Preliminary Design Report").
* **Date:** When the document was created.
* **Prepared By:** Agency, team, or organization responsible for the report.

**2. Executive Summary**

* Brief overview of the mission objectives, importance, and expected outcomes.
* High-level design considerations (e.g., launch window, destination).

**3. Mission Objectives**

* Clearly defined scientific, technical, or exploratory goals.
* Prioritization of primary and secondary objectives.
* Justification for the mission.

**4. Science and Exploration Goals**

* Details on the scientific objectives (e.g., studying Martian soil composition, searching for water).
* Description of the instruments or methods required.

**5. Concept of Operations (CONOPS)**

* Overview of how the mission will be conducted from start to finish.
* High-level timeline of mission phases:
  + **Launch:** Date, vehicle, and site.
  + **Cruise Phase:** Travel time and trajectory.
  + **Entry, Descent, and Landing (EDL):** Key landing details.
  + **Surface Operations:** Planned activities at the target site.

**6. Mission Design**

* **Trajectory Analysis:**
  + Optimal transfer trajectory.
  + Gravity assist maneuvers or direct routes.
* **Spacecraft Design:**
  + Configuration, systems, and payload.
* **Launch Vehicle Selection:**
  + Type of rocket, payload capacity, and launch window.
* **Ground Segment:** Tracking, telemetry, and data management.

**7. Cost Analysis**

* Estimated budget for mission phases.
* Cost breakdown (e.g., development, launch, operations).

**8. Risk Assessment**

* Identification of technical and operational risks.
* Mitigation strategies.

**9. Technical Appendices**

* **Orbital Parameters:** Specific details of trajectory.
* **Subsystem Details:** Detailed descriptions of subsystems like power, thermal, and propulsion.
* **Simulation Results:** Computational models, test data, and performance analysis.