Lesson Plan Form

**Course Title: Digital and Satellite Communication**

**Course Code: ETE-452**

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| **Title:** Satellite Subsystems: Telemetry , Tracking , Command and Monitoring | | | **Ref. No**: ETE 452/04 | |
| **Target Population:** 25 | | | **Duration** :90 minutes | |
| **Aims/Rationale**: After completing these lesson students are able to understand about the Satellite Communication Notes on **Satellite Communication** Subsystems that are required on a spacecraft with details of **Telemetry**, Tracking and Command System. TTC&M refers to Telemetry Monitoring and Command subsystem. | | | | |
| **Learning Outcomes:** At the end of the session participant will be able to :  1. Understand the Satellite subsystems: Two principal subsystems- the platform and the payload.  2. The platform of satellite subsystem.  3. Understand the function and capabilities of the payload are the reasons a satellite is placed in orbit. The payload provides space­ based capabilities to the users.  4. Understand the control segment. The control segment is responsible for the operation of the overall system which includes platform control, payload control and network control. The control segment consists of ground satellite control facilities and systems on the satellites.. | | | | |
| **Content** | **Method or Technique** | **Resource or Aid** | | **Time** |
| **Introduction:** Welcome address  Rapport building  Bridging topic  Layout/ content outline  Attendance  Pre-assessment | Lecture  Q/A | W/B | | 10 minutes |
| **Development:**  **Section-A**  Introduction Satellite subsystems- All satellites have two principal subsystems: The Platform and the payload.  **Section-B**  The platform consist of the following components and describe the components:   * Structure of the satellite * Power * Propulsion * Stabilization and Attitude Control * Thermal Control * Environmental Control * Telemetry, Tracking and Command   **Section-C**  Types of energy sources: Solar Energy, Chemical Energy, Nuclear Energy.  Propulsion  Stabilization and attitude control  **Section-D**  Control Segment-  Introduction  Platform control  Payload control  Network control  Telemetry, tracking and commanding(TT&C)  **Section –E**  Reliability of satellite systems  Failures | Lecture  Discussion  Do  Do  Do  Do | W/B  MMP  Video | | 10 minutes  20 minutes  15 minutes  20 minutes  5 minutes |
| **Conclusion:**  Recap main points  Feedback & answer  Assessment of LOs  Reference  Forward plan | Lecture  Discussion  Q/A |  | | 10 minutes |
| **Equipment & aids:** Optional | | | | |