 

**CHITKARA UNIVERSITY INSTITUTE OF ENGINEERING & TECHNOLOGY, PUNJAB**

**DEPARTMENT OF INTERDISCIPLINARY COURSES IN ENGINEERING**

**Embedded Systems and Internet of Things Laboratory**

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Class Group Section Project Group

**Project Abstract**

**Project Title: IOT based Remote Land Monitoring Vehicle**

**Abstract:** The IoT-based Remote Land Monitoring Vehicle is an advanced surveillance system designed to monitor and analyse remote terrains in real time. Equipped with sensors, cameras, and wireless communication modules, the vehicle collects environmental data, detects obstacles, and transmits live footage to a central server or a mobile application. Utilizing IoT and cloud computing, it ensures seamless data access and remote control, making it ideal for agriculture, defence, and disaster management. The system enhances efficiency, reduces human effort, and provides real-time insights, making land monitoring safer and more effective. Its autonomous and manual modes offer flexible and intelligent operation.

**Application Area:** Defence, Disaster Management, Planetary surface analysis, lunar and Martian terrain monitoring

**Impact on Society/Industry:** Efficiency, Disaster Management, Environmental Conservation and Space Exploration

**Sustainable Development Goals:** Environmental Conservation, Smart Agriculture, Resilient Infrastructure.

**Technology Stack- Hardware:** NodeMCU ESP8266,​ 7805 Voltage Regulator,​ L293D Motor Driver,​ Capacitors (100µF, 35V & 0.1µF Ceramic),​ 12V Battery,​ 12V DC Geared Motors​, Chassis​, Wheels & Castor Wheel​

**Software:** Arduino IDE​, C++ (Arduino Language)​, Blynk/MIT App Inventor/Firebase​ MQTT or HTTP Protocols​, ESP8266Wifi Library​, Motor Control Libraries(AFMotor,L293D.h)​

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**Group Details:**

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| **S Sr. No** | **Nam Name of Students** | **Roll No** | **Project Guide Name and Signature** |
| 1. | Ayush Kumar | 2310990309 | **Dr. Danvir Mandal** |
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| 3. | Parth Rana | 2310991404 |

**Approved By:**

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| --- | --- | --- |
| **Name of Faculty in Panel** | **Designation** | **Signature** |
| Dr. Rajneesh Talwar | Dean DICE |  |
| Dr. Danvir Mandal | Assistant Professor |  |

**Final Approved by**

**Dr. Rajneesh Talwar**

**Dean DICE**