

**PROJECT 2025**

**Department of Electronics and Communication Engineering**

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| **Title of the Project:** | | **SMART IRRIGATION AND MONITORING SYSTEM USING IOT** | |
| **S.No** | **Students Name** | **Register Number** | **Year/Sem/Sec** |
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| **ABSTRACT** | | | |
| Agriculture faces increasing challenges due to water scarcity, unpredictable weather patterns, and labor shortages. To address these issues, this project proposes a Smart Irrigation and Monitoring System using IoT, leveraging real-time environmental sensing and automated decision-making to enhance farming efficiency. The system employs sensors to monitor soil moisture, temperature, humidity, and light intensity, which are processed by an ESP8266 microcontroller and transmitted via Wi-Fi to an IoT platform, such as ThingSpeak. Based on the data, the system autonomously controls irrigation by activating or deactivating water pumps, ensuring optimal water use while reducing manual labor and preventing over-irrigation.The integration of IoT allows for remote monitoring and control through mobile or web interfaces, enabling farmers to make data-driven decisions. Implementation in precision agriculture has shown significant improvements in crop health and resource conservation. The system is scalable and cost-effective, making it suitable for both small and large-scale agricultural applications. | | | |
| **APPLICATIONS** | | | |
| * Large-Scale Farming * Urban and Rooftop Gardening * Smart Greenhouses * Government and NGO Projects | | | |

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