

Lesson Plan for Irrigation Engineering

Name of the Faculty: Suresh Kumar

Discipline: Civil Engineering

Semester: 4th

Subject: Irrigation Engineering

Lesson Plan Duration: 15 weeks (from January 2026 to April 2026)

Workload (Lectures/Practical per week): Lectures – 03

| Week | Lecture Day | Topic |
|------|-------------|---|
| 1 | 1 | Introduction: Definition and Necessity of Irrigation. |
| | 2 | Major, Medium, and Minor Irrigation Projects in India. |
| | 3 | Hydrology and Hydrological Cycle. |
| 2 | 1 | Rain Gauges: Automatic and Non-Automatic (Symons Rain Gauge). |
| | 2 | Methods of Estimating Average Rainfall (Arithmetic System). |
| | 3 | Runoff: Factors Affecting Runoff and Catchment Area. |
| 3 | 1 | Hydrograph and Basic Concept of Unit Hydrograph. |
| | 2 | Principal Crops in India and Their Water Requirements. |
| | 3 | Crop Seasons: Kharif and Rabi; Crop Period and Base Period. |
| 4 | 1 | Duty, Delta, and Their Relationship. |
| | 2 | Gross Command Area (GCA), Culturable Command Area (CCA), and Intensity of Irrigation. |
| | 3 | Methods of Irrigation: Flow and Lift Irrigation. |
| 5 | 1 | Sessional Test 1 and Revision |
| | 2 | |
| | 3 | |
| 6 | 1 | Drip Irrigation: Layout, Components, Advantages, and Disadvantages. |
| | 2 | Canals: Definition, Classification, and Appurtenances. |
| | 3 | Canal Lining: Types, Advantages, and Disadvantages. |
| 7 | 1 | Canal Breaches: Causes and Control. |
| | 2 | Maintenance of Lined and Unlined Canals. |
| | 3 | Canal Headworks: Objectives and General Layout of Different Parts. |
| 8 | 1 | Difference Between Weir and Barrage. |
| | 2 | Cross Drainage Works: Necessity and Types (Aqueducts and Superpassages). |
| | 3 | Types of Dams: Earth Dams - Causes of Failure and Cross-Section of Zoned Earth Dam. |
| 9 | 1 | Sessional Test 2 and Revision |
| | 2 | |
| | 3 | |

| Week | Lecture Day | Topic |
|------|-------------|--|
| 10 | 1 | Gravity Dams: Types, Cross-Section, and Method of Construction. |
| | 2 | Spillways: Concept, Types, and Energy Dissipators. |
| | 3 | Canal Falls, Outlets, and Escapes: Definitions and Functions. |
| 11 | 1 | River Training Works: Definition, Functions, and Types. |
| | 2 | Types of River Training Works: Groynes, Guide Banks, and Cut-Offs. |
| | 3 | Water Logging: Causes, Effects, and Prevention. |
| 12 | 1 | Soil Reclamation: Surface and Sub-Surface Drainage Systems. |
| | 2 | Water Harvesting Techniques: Need, Requirement, and Methods. |
| | 3 | Maintenance of Irrigation Structures and Automation in Irrigation. |
| 13 | 1 | Integrated Water Resource Management: Concepts and Benefits. |
| | 2 | Planning and Management of Small and Micro Dams. |
| | 3 | Final Discussions and Preparations. |
| 14 | 1 | Sessional Test 3 and Revision |
| | 2 | |
| | 3 | |
| 15 | 1 | Final Preparations for Exams. |
| | 2 | |
| | 3 | |