Name of the Faculty : **Mr. Arundeep Singh Panwar**

Discipline : **Civil Engineering**

Semester : **4th**

Subject : **Irrigation Engg**

Lesson Plan Duration : **15 Weeks (from 20th Jan 2025 to 2nd May 2025)**

Week	Theory	
	Lecture Day	Topic (including assignment / test)
1st	1	**1. Introduction: Irrigation Engineering, Hydrological Cycle, Run-off and Catchment Area** 1.1 Definition and necessity of irrigation 1.2 Major, medium and minor irrigation projects
	2	1.3 Hydrology and hydrological cycle 1.4 Rain-gauges – automatic and non-automatic (Symons rain gauge)
2nd	1	1.5 Methods of estimating average rainfall (Arithmetic system) 1.6 Runoff and Factors affecting runoff, Catchment area
	2	1.7 Hydrograph and basic concept of unit hydrograph.
3rd	1	**2. Water Requirement of Crops** 2.1 Principal crops in India and their water requirements
	2	2.2 Crop seasons – Kharif and Rabi 2.3 Crop period, base period, Duty, Delta and their relationship
4th	1	2.4 Gross commanded area (GCA), culturable commanded area (CCA), Intensity of Irrigation, Irrigable area
	2	Revision/Assignment No I
5th	1	**First Sessional**
	2	**3. Methods of Irrigation** 3.1 Flow irrigation – Definition and its types (only description) 3.2 Lift Irrigation – Tube well, Types of tube wells (only description)
6th	1	3.3 Explanation of terms: water table, radius of influence, depression head, cone of depression, confined and unconfined aquifers, advantages and disadvantages of tube well irrigation.
	2	3.4 Sprinkler irrigation- Conditions favourable, Types and component parts, advantages and disadvantages of sprinkler irrigation
7th	1	3.5 Drip irrigation- layout, component parts, advantages and disadvantages of drip irrigation.
	2	**4. Canals , Canal Head Works, Regulatory Works and Cross Drainage Works** 4.1 Definition and Classification of canal. (Visit to a Canal) 4.2 Appurtenances of a canal and their functions.
8th	1	4.3 Various types of canal lining - their related advantages and

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		disadvantages, 4.4 Canal breaches and their control. 4.5 Maintenance of lined and unlined canals
	2	4.6 Definition, objectives and general layout of different parts of head works. 4.7 Difference between weir and barrage 4.8 Definition and necessity of Cross Drainage Works (Visit to a Cross Drainage Works)
9th	1	4.9 Concept of Aqueduct, super passage, level crossing, inlet and outlet.
	2	Revision/Assignment No II
10th	1	**Second Sessional**
	2	**5. Dams and hydraulic Structures** 5.1 Dam and its Classification 5.2 Earth dams - types, causes of failure; cross-section of zoned earth dam, method of construction,
11th	1	5.3 Gravity dams – types, cross-sections of a dam, method of construction 5.4 Concept of spillways and energy dissipators
	2	**6. River Training Works** 6.1 Definition, function of river training works
12th	1	6.2 Types of river training- Embankments or levees. 6.3 Concept of Guide bank, Groynes or spurs, Pitched island, Cut-off
	2	**7. Water Logging and Drainage and Ground Water Re-charge** 7.1 Definition of water logging – its causes and effects.
13th	1	7.2 Detection, prevention and remedies 7.3 Surface and sub-surface drains and their layout (only description)
	2	7.4 Water Harvesting Techniques: Need and requirement. 7.5 Various methods of rain water harvesting.
14 th	1	Revision/Assignment No III
		Third Sessional
15th	2	**Revision**

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