IRRIGATION WATER DISTRIBUTION SYSTEMS (ELECTIVE-II)

Course Code: 13CE2117

L	P	C
4	0	3

Course Outcomes:

At the end of the course, the student will be able to:

CO1 : Outline the irrigation system and develop method of distribution
CO2 : Discuss about the channels and various head works
CO3 : Design erodible and non erodible channels, proportional dividers and bed dams.
CO4 : Operate and maintenance of closed conduit water distribution system
CO5 : Measure the flow with different devices.

UNIT-I

INTRODUCTION: Irrigation development in India – type of irrigation system – method of distribution – RWS, Warabandi, Shejpati and localization.

UNIT-II

DISTRIBUTION WORKS: Types of Head works – Classification of Channels – Regulations - Drops Canal escapes – Sluices – Sand vent – Tail dams – Syphons.

UNIT-III

CANAL: Design of erodible – non-erodible channels – diversion box – outlet – proportional dividers – bed dam.

UNIT-IV

BLOCK / CHAK DESIGN: Command ability – realignment of block – operation and maintenance.

CLOSED CONDUIT DISTRIBUTION: Drip – Sprinkler – Underground pipe design – Layout – Evaluation – Operation and Maintenance.

UNIT-V

FLOW MEASUREMENTS: Flow measuring structures – Flumes Weirs – Orifices – Dilution Techniques –Channel transitions – Canal losses – Measurement of losses.

TEXT BOOKS

1. Varshney R.S., Gupta S.C. and Gupta R.L., *"Theory and Design of Irrigation Structures",* 2nd edition, Nemchand & Brothers, Roorkee, 1992.

2. Sharma R.K., *"Irrigation Engineering and Hydraulic Structures"*, 1st edition, Oxford and IBH Publishing Co., New Delhi, 1984.

3. S.K Garg, *"Irrigation engineering and hydraulic structures",* 24th Edition, Khanna Publishers, 2012.

REFERENCES

1. Ellis H.W., *"College of Engineering Irrigation Manual"*, Govt. of Tamil Nadu, 1973.

2. Richard H. Cuneca, *"Irrigation Systems Design (An Engineering Approach)*" , 1st Edition, Prentice Hall Inc., 1989.

3. Michael A.M., *"Irrigation Theory and Practice",* 2nd edition, Vikas Publishing House Pvt. Ltd., 1995.

****