

**IRRIGATION WATER DISTRIBUTION SYSTEMS  
(ELECTIVE-II)****Course Code: 13CE2117****L P C  
4 0 3****Course Educational Objectives:**

1. To impart the knowledge on irrigation systems and distribution works.
2. To familiarize the student with design of channels and block/chak.

**Course Outcome:**

1. The students will demonstrate the ability to designing of channels and block/chak.
2. To impart the students, with the knowledge of types of irrigation systems.
3. To impart the students, with the knowledge of distribution works.
4. To impart the students, with the knowledge of closed conduit distribution.

**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*”, 24<sup>th</sup> 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.

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