

1151CE304 (VTUR15)	ENVIRONMENTAL AND IRRIGATION DRAWING	L	T	P	C
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**Course Category:** Laboratory Course

**A. Preamble:**

- To make the students to design various environmental and irrigation structures.

**B. Prerequisites:**

- Design of RC structures
- Environmental Engineering

**C. Course Educational Objectives:**

- To make the students to design various concept of reinforced concrete structures regarding environmental and irrigation operations.
- The student acquires hands on experience in design and analysis of Concrete structures in environmental and irrigation engineering practice.

**D. Course Outcome:**

CO Nos.	Course Outcomes	Level of learning domain (Based on revised Bloom's)
CO1	Understand the Design and drawing of RC sand filters and septic tank with reinforcement details	K3
CO2	Understand the Design and drawing of RC Trickling filter and sedimentation tank reinforcement details	K3
CO3	Understand the Design and drawing of RC Tank sluice and canal drop with reinforcement details	K3
CO4	Understand the Design and drawing of RC siphon aqueduct, canal escape and intake tower with reinforcement details	K3

**E. Course Content:**

**LIST OF EXPERIMENTS**

**Design and drawing of**

1. Slow sand filter bed.
2. Rapid sand filter for waste water treatment.
3. Coagulation and sedimentation tank.

4. Trickling filter.
5. Septic tank.
6. Tank sluice with tower head.
7. Tank Surplus Weir.
8. Match type canal Headwork.
9. Syphon aqueduct.
10. Canal Regulator.
11. Concrete dam.

**TOTAL: 30 Periods**

**F. Learning Resources:**

**a) TEXT BOOKS**

1. Modi P.N, “Environmental Engineering I&II”, Standard Book House, Delhi – 6.
2. Sathyanarayana Murthy, “Irrigation Design and Drawing” Published by Mrs.Banumathi L, Tuni east, Godavari District. A.P. 1998.
3. Sharma R.K, “Irrigation Engineering and Hydraulic structures” Oxford and IBH Publishing Co., New Delhi 2002.

**b) REFERENCES**

1. Peary, H.S., ROWE, D.R., Tchobanoglous, G., “Environmental Engineering”, McGraw-hill Book Co., New Delhi, 1995.
2. Metcalf & Eddy, “Wastewater Engineering (Treatment and Reuse)”, 4th Edition, Tata McGraw-Hill, New Delhi, 2003.
3. Garg S.K., “Irrigation Environmental Engineering and Design structures” Khanna Publishers, New Delhi, 17th Reprint 2003.
4. Manual on Water Supply and Treatment, CPHEEO, Government of India, New Delhi, 1999.
5. Manual on Sewerage and Sewage Treatment Plant, CPHEEO, Government of India, New Delhi, 1993.