

Branch Name:	Environment Engineering
Program Code:	ET212
Subject Title:	Sustainable Water Resource Management
Subject Code:	2ET2120303T
Pre-requisite Subject:	Basic Knowledge of water and wastewater parameters & Basic concepts regarding water and wastewater treatment units

Course Objective:

To make the students aware on

- The sustainability principles for water management
- Watershed management practices
- Inter-basin transfers water audit and footprints
- National and state water policies role of PPP in water sector

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								Total (Marks)
					Theory (Marks)				Practical (Marks)				
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
4	3	1	-	4	24	60	16	40	-	-	-	-	100

Subject Contents				
Sr. No	Topic	Total Hours	Weightage (%)	
1	Sustainability principles for water management- Sustainable water resource indicators-National and state water policies-watershed management practices- Social Aspects of Watershed Management: Community participation- Inter basin transfer of water- Storm water and flood management-virtual water trade- water audit- footprints-Public private partnership in water management. Introduction about EPANET. Decentralization of domestic wastewater management.	42	100	

Reference Books:

1. Negi S S, Integrated watershed Management, Oriental Enterprises, 2001
2. Jeffrey Sturman, G. E. Ho, Kuruvilla Mathew, 2004. Water Auditing and Water Conservation, WA Publishing
3. Robin Clarke, Jannet King, 2004. The atlas of water: mapping the world's most critical resource, Earthscan
4. Paul Simon, 2003. Tapped out: the coming world crisis in water and what we can do about it. Welcome Rain
5. Frederick R. Troeh, J. Arthur Hobbs, Roy L. Donahue, 2003. Soil and Water Conservation for Productivity and Environmental Protection Prentice Hall Rs. 5986
6. Joseph P. Quinlan, Sumantra Sen, Kiran Nanda, 2014. Thirsty Nation, Random House India

List of Open-Source Software/learning website:

1. <https://nptel.ac.in/>

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Student will be introduced to sustainability principles for water management, various aspects of water shed management	L-2
CLO2	Student will be introduced to storm water management techniques	L-2
CLO3	Discussion about concepts of water auditing and water foot printing	L-3
CLO4	Understand the role of PPP in India's water sector	L-2

L1- Remember, L2- Understand, L3- Apply, L4- Analyze, L5- Evaluate, L6- Create

Mapping of CLOs with POs & PSOs

Course	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO1		M	M				M		M					M	
CLO2		M	M				M		M					M	
CLO3	L	M	M				M							M	
CLO4						M	M							M	

H: High, M: Medium, L: Low