



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Technology and Science
Choice Based Credit System (CBCS) in Light of NEP-2020
Civil Engineering Department
Vocational Course

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME									
			THEORY			PRACTICAL			L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*					
VOCE501	Vocational	Fundamentals of Rainwater Harvesting and Management	0	0	0	60	40	2	0	4	4	

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit.

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

Student will be able to

1. Introduce students to the principles and practices of rainwater harvesting.
2. Equip students with practical skills to design and implement basic rainwater harvesting systems.

Course Outcomes (COs):

Student will be able to

1. Explain the fundamentals and benefits of rainwater harvesting.
2. Identify and assemble components of a rainwater harvesting system.
3. Design a basic rainwater harvesting system and calculate potential yields.
4. Implement and maintain small-scale rainwater harvesting projects.
5. Create and deliver educational materials to promote rainwater harvesting in their community.

Unit – 1

5 Hrs.

Introduction to Rainwater Harvesting - Definition and importance of rainwater harvesting, History and global practices, Benefits: environmental, economic, and social aspects, Overview of water scarcity and sustainable water management.

Unit – 2

6 Hrs.

Components of Rainwater Harvesting Systems - Key components: catchment area, conveyance system, filtration, storage, and distribution, Types of catchment areas: roofs, ground surfaces, Materials for storage tanks and conveyance systems, Maintenance, and care of systems

Unit – 3

6 Hrs.

System Design and Calculation - Factors influencing system design: rainfall patterns, roof area, water demand, and storage capacity, calculating potential rainwater yield, Types of systems: direct use, storage, and groundwater recharge, Integrating with existing water systems

Unit – 4

6 Hrs.

Implementation and Case Studies – Steps for implementing a rainwater harvesting system, Case studies of successful projects: urban and rural examples, Challenges and solutions in implementation, Legal and regulatory considerations.

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Unit – 5

7 Hrs.

Community Engagement and Education – Importance of community involvement and education, Strategies for promoting rainwater harvesting in the community, Long-term sustainability and benefits, Student roles in community education

Textbooks:


1. Water Management Conservation Harvesting and Artificial Recharge by Dr A S Patel, Jain Book Depot.
2. Rainwater Harvesting by Chandrawati Jee, APH Publishing Corporation.
3. Rainwater Harvesting by Inder Jeet, Mittal Publications.

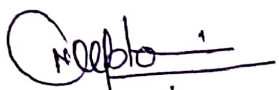
Reference Books:

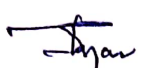
1. Designing Rainwater Harvesting Systems: Integrating Rainwater into Building Systems by Novak C A, Van Geisen, Eddie, DeBusk, Kathy M., John Wiley & Sons Inc, 2014.
2. Water Resources Management by K Nageswara Rao, Jain Book Depot.


List of Practicals

1. Building a simple rainwater collection model using household materials
2. Observing and discussing the model's design and functionality
3. Hands-on activity: Assembling a basic rainwater collection system with components like pipes, filters, and storage containers
4. Examining different types of filtration methods
5. Calculating the potential rainwater harvest for a small area using sample data
6. Designing a simple rainwater harvesting system for a designated area
7. Role-playing activity: Addressing common challenges and proposing solutions
8. Developing a simple community awareness campaign (e.g., poster design, presentation)
9. Creating educational materials to promote rainwater harvesting in the school or local community


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