

## **OAI752 INTEGRATED WATER RESOURCES MANAGEMENT**

### DETAILED SYLLABUS

#### **OBJECTIVE:**

- To introduce the students to the interdisciplinary analysis of water and conceptual design of intervention strategies.
- To develop a knowledge-base on capacity building on IWRM.

#### **UNIT I IWRM FRAMEWORK**

Definition – Objectives – Principles - Evolution of IWRM - IWRM relevance in water resources management – Paradigm shift: Processes and prospective outcomes

#### **UNIT II CONTEXTUALIZING IWRM**

UN formulations - SDG goals - IWRM in Global, Regional and Local water partnership – Institutional transformation - Bureaucratic reforms - Inclusive development

#### **UNIT III EMERGING ISSUES IN WATER MANAGEMENT**

Emerging Issues -- Drinking water management in the context of climate change - IWRM and irrigation - Flood – Drought – Pollution – Linkages between water, health and poverty

#### **UNIT IV IWRM AND WATER RESOURCES DEVELOPMENT IN INDIA**

Rural Development - Ecological sustainability- -Watershed development and conservation - Ecosystem regeneration – Wastewater reuse - Sustainable livelihood - Food security

#### **UNIT V ASPECTS OF INTEGRATED DEVELOPMENT**

Capacity building - Conceptual framework of IWRM – Problems and policy issues - Solutions for effective integrated water management - Case studies

#### **OUTCOMES:**

The students will be able to

- Understand objectives, principles and evolution of integrated water resources management
- Have an idea of contextualizing IWRM

## SSLC, HSE, DIPLOMA, B.E/B.TECH, M.E/M.TECH, MBA, MCA

*Notes*

*Syllabus*

*Question Papers*

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- Gain knowledge in emerging issues in water management, flood, drought, pollution and poverty.
- Understand the water resources development in India and wastewater reuse.
- Gain knowledge on integrated development of water management.

### **TEXTBOOKS:**

1. Mollinga P. et al. "Integrated Water Resources Management", Water in South Asia Volume I, Sage Publications, 2006.
2. Sithamparamanathan, Rangasamy, A., and Arunachalam, N., "Ecosystem Principles and Sustainable Agriculture", Scitech Publications (India) Pvt.Lt, Chennai, 1999.

### **REFERENCES:**

1. Cech Thomas V., Principles of Water Resources: History, Development, Management and Policy. John Wiley and Sons Inc., New York. 2003.
2. Murthy, J.V.S., "Watershed Management in India", Wiley Eastern Ltd., New York, 1995.
3. Dalte, S.J.C., "Soil Conservation and Land Management", International Book Distribution, India, 1986.