

M.Sc. Environmental Science
Semester-IV
WATER RESOURCES

UNIT- I

Introduction to water resources: Water use and availability: domestic use, industrial use, agricultural use, In-stream use. World water resources development, Types of water resources: surface water, Ground water, Origin of groundwater, Ground water: unconfined and confined aquifer, effect of ground water usage. Threats to water resources: water pollution, flooding, overexploitation. Types of aquifer, permeability, Groundwater movement, Types of fresh water bodies: Lentic, Lotic

UNIT- II

Water Resources: Classification of water resources, characteristics of water resources. Problems of water and ground water resource depletion, watershed types and Functions. Sustainable use of water resources. Water conservation and management practices, Rain water harvesting.

UNIT – III

Hydrological Cycle And Precipitation: Hydrological cycle, Hydrological budget Precipitation. drainage system, classifications characteristics of water resources, surface runoff, stream flow estimation, rainfall-runoff relationship, stream flow estimation, erosion control, water conservation.

Water Quality Management- Principles of water quality – Water quality classification – Water quality standards

UNIT IV

Management of water resources: why management? what about to be managed? how to manage? concept of environmental water management, Concept of Integrated Water Resources Management (IWRM), water allocation and water scheduling problem, equitable manners of water management, Watershed management, concept of sustainable water resources development.

Case Studies: Various Water conflicts, YAP, GAP