

Water Resources Development

Course Contents

Sl. No.	Particulars	Contact Hours
1.	Occurrence of water on earth and its movement – the Hydrologic Cycle, surface and ground water, Importance of water resource management:	2
2.	Surface Water <ul style="list-style-type: none">• Diversion and Storage Schemes• Single and Multipurpose Projects	2
3.	Diversion Schemes <ul style="list-style-type: none">• Diversion Headworks-components and their functions• Distribution of water-canal systems• Basics of canal alignment and design• Types of canal works-falls, regulators, cross drainage works etc.	12
4.	Storage Schemes <ul style="list-style-type: none">• Reservoir Planning<ul style="list-style-type: none">○ Preliminary Surveys○ Mass curve○ Flood Routing○ Economic Considerations○ Sedimentation○ Environmental impact• Dams<ul style="list-style-type: none">○ Type of Dams and their suitability for different conditions○ Basic design criteria and causes of failure• Spillways<ul style="list-style-type: none">○ Types and their characteristics○ Terminal structures – energy dissipation	12
5.	Hydropower and related structures (water conductor system and powerhouse building)	4
6.	Special problems of hilly streams	2
7.	Ground Water <ul style="list-style-type: none">• Occurrence and exploration• Classification of aquifers parameters• Pumping tests• Preliminary Well Hydraulics and discharge computations	6
8.	Decision Support Systems in water resources – preliminary concepts	2