

CE/BOS/ CE E62/0210

**K L UNIVERSITY**  
**GROUND WATER HYDROLOGY (09 – CE E62)**

**SYLLABUS**

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**UNIT – 1: Fundamentals of Ground Water**

Introduction – Characteristic of Ground water Distribution of water - ground water column –Permeability - Darcy's Law – Laboratory permeability test - Types of aquifers - Hydro geological Cycle – water level fluctuations.

**UNIT-2: Hydraulics of Flow**

Storage coefficient - Specific field - Heterogeneity and Anisotrophy -Transmissivity - Governing equations of ground water flow - Steady state flow - Dupuit Forchheimer assumptions - Velocity potential - Flow nets

**UNIT-3: Estimation of Parameter**

Transmissivity and Storativity – Pumping test - Unsteady state flow - Thiess method - Jacob method - Image well theory – Effect of partial penetrations of wells - Collectors wells.

**UNIT-4: Ground Water Development**

Infiltration gallery - Conjunctive use - Artificial recharge -Safe yield -Yield test – Geophysical methods – Selection of pumps.

**UNIT-5: Water Quality**

Ground water chemistry - Origin, movement and quality - Water quality standards - Saltwater intrusion –Environmental concern.

**TEXTBOOKS:**

1. Raghunath H.M., “Ground Water Hydrology”, Wiley Eastern Ltd., 2000.
2. Todd D.K., “Ground Water Hydrology”, John Wiley and Sons, 2000.

**REFERENCEBOOKS:**

1. C Walton, “Ground Water Resource Evaluation”, McGraw-Hill Publications