CE433 GROUNDWATER HYDROLOGY & MANAGEMENT (3L-0T-0P:3Cr, 3Hr)

Introduction to groundwater hydrology; Well and aquifer characteristics; Groundwater flow in aquifers, groundwater recharge, fluctuation of water table beneath a recharge site; Hydraulics of fully and partially penetrating wells in confined, leaky and unconfined aquifers under steady and transient conditions; Analysis of pumping test data; Groundwater investigations; Basin management of groundwater and groundwater quality; Model studies; Sea water intrusion.

COURSE OUTCOME

1. Apply mathematics and engineering principles to estimate the aquifer parameters and identify the various geologic formations and its properties.
2. Analyse the principles of porous media flow for management of ground water resources.
3. Analyze the flow characteristics in wells for various aquifers.
4. Demonstrate the knowledge and understanding of engineering and management principles in application to groundwater investigation and its management.

TEXT BOOKS

1. D.K. Todd, “Groundwater Hydrology”, John Wiley & Sons, 1993.
2. C. Walton, “Groundwater Resources Evaluation”, McGraw Hill, 1970.
3. H.M. Raghunath, “Groundwater Hydrology”, New Age International, 1993.
4. O.D.L. Strack, “Groundwater Mechanics”, Prentice Hall, 1989.
5. S.P. Garg, “Groundwater and Tube Wells”, Oxford & IBH Publishing Co., 1993.