

For Syllabus, Question Papers, Notes & many More

## **CE6001 HYDROLOGY**

### **DETAILED SYLLABUS**

#### **UNIT I PRECIPITATION**

Hydrologic cycle – Types of precipitation – Forms of precipitation – Measurement of Rainfall – Spatial measurement methods – Temporal measurement methods – Frequency analysis of point rainfall – Intensity, duration, frequency relationship – Probable maximum precipitation.

#### **UNIT II ABSTRACTION FROM PRECIPITATION**

Losses from precipitation – Evaporation process – Reservoir evaporation – Infiltration process – Infiltration capacity – Measurement of infiltration – Infiltration indices – Effective rainfall.

#### **UNIT III HYDROGRAPHS**

Factors affecting Hydrograph – Baseflow separation – Unit hydrograph – Derivation of unit hydrograph – S curve hydrograph – Unit hydrograph of different deviations - Synthetic Unit Hydrograph

#### **UNIT IV FLOODS AND FLOOD ROUTING**

Flood frequency studies – Recurrence interval – Gumbel's method – Flood routing – Reservoir flood routing – Muskingum's Channel Routing – Flood control

#### **UNIT V GROUND WATER HYDROLOGY**

Types of aquifers – Darcy's law – Dupuit's assumptions – Confined Aquifer – Unconfined Aquifer – Recuperation test – Transmissibility – Specific capacity – Pumping test – Steady flow analysis only.

#### **TEXTBOOKS**

1. Subramanya, K., "Engineering Hydrology", Tata McGraw Hill Publishing Co., Ltd., 2000
2. Raghunath, H.M., "Hydrology", Wiley Eastern Ltd., 2000

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3. Jayarami Reddy .P. Hydrology, Tata McGraw Hill, 2008.

4. Madan Mohan das and Mimi Das Saikia, Hydrology, Prentice Hall of India, 2013.

#### **REFERENCES**

1. Chow, V.T. and Maidment D.R. , “Hydrology for Engineers”, McGraw-Hill Inc., Ltd., 2000

2. Singh, V.P., “Hydrology”, McGraw Hill Inc., Ltd., 2000.

#### **OBJECTIVES**

To impart knowledge on hydrological cycle, spatial and temporal measurement and analysis of rainfall and their applications including flood routing and ground water hydrology.