

III Year – II SEMESTER

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3+1*	0	3

CE603-WATER RESOURCES ENGINEERING-I

Lecture :	3 hrs/Week	Internal Assessment :	Marks
Tutorial :	1 Hrs/Week	Semester End Examination :	Marks
Practical :	--	Credits :	3

Course Learning Objectives:

The course is designed to

1. Introduce hydrologic cycle and its relevance to Civil engineering.
2. Make the students understand physical processes in hydrology and, components of the hydrologic cycle.
3. Appreciate concepts and theory of physical processes and interactions.
4. Learn measurement and estimation of the components hydrologic cycle.
5. Provide an overview and understanding of Unit Hydrograph theory and its analysis.
6. Understand flood frequency analysis, design flood, flood routing.
7. Appreciate the concepts of groundwater movement and well hydraulics.

Course Outcomes

At the end of the course the students are expected to

- a. Have a thorough understanding of the theories and principles governing the hydrologic processes.
- b. Be able to quantify major hydrologic components and apply key concepts to several practical areas of engineering hydrology and related design aspects.
- c. Develop Intensity-Duration-Frequency and Depth-Area Duration curves to design hydraulic structures.
- d. Be able to develop design storms and carry out frequency analysis.
- e. Be able to determine storage capacity and life of reservoirs.
- f. Develop unit hydrograph and synthetic hydrograph.
- g. Be able to estimate flood magnitude and carry out flood routing.
- h. Be able to determine aquifer parameters and yield of wells.
- i. Be able to model hydrologic processes.