

CV4115 Applied Hydrology

[Lecture: 26 hrs ; Tutorial: 13 hrs; Lab: 0 hr; Pre-requisite: CV2016; Academic Unit: 3]

Learning Objective :

This course provides the knowledge for analysis and management of surface water in rural and urban catchments.

Course Content :

Hydrologic processes and measurements: rainfall, infiltration, and surface runoff. Hydrograph analysis and synthesis. Hydrologic and hydraulic flood routing. Probability in hydrology: data selection and frequency analysis. Hydrologic modeling. Drainage design: rainfall curves, flood peak estimation, highway drainage. Flood mitigation: detention ponds, channel improvements.

Course Outline :

S/N	Topic
1.	Hydrologic processes and measurements
2.	Hydrograph analysis and synthesis
3.	Hydrologic and hydraulic flood routing
4.	Probability in hydrology
5.	Hydrologic modeling
6.	Drainage design
7.	Stormwater management and Flood mitigation

Learning Outcome :

Upon successful completion of the course, students will be able to understand the hydrologic processes and their methods of measurements, analyse the rainfall, evaporation and infiltration data, analyse and synthesize the surface runoff hydrograph, perform hydrologic and hydraulic flood routing, understand probability in hydrology, carry out drainage design in rural and urban catchments, and carry out designs of detention ponds and channel improvements.

Textbooks :

Linsley, RK; Kohler, MA and Paulhus, JLH, "Hydrology For Engineers", SI edition, McGraw-Hill, 1988.

References :

- Chow, VT; Maidment, DR; Mays, LW (1988) "Applied Hydrology", McGraw-Hill, 1988.
- Linsley, RK; Franzini, JB; Freyberg, DL; Tchobanoglous, G., "Water Resources Engineering", 4th edition, McGraw-Hill, 1992.