GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN CIVIL ENGINEERING

SEMESTER: V

Subject Name: **Water Resources Management Practice**

Sr. No.	Work Details	Hours 28
1	**Numerical Examples :** **(a) Hydrology** - Average rain-fall by all three methods - Determination of No. of rain gauge stations for given C.A. **(b) Runoff** - Compute run off by various methods for given catchment. (use formulae) - Calculate runoff by Index (w-index and -index) - Construct unit hydrograph from a given storm hydrograph (rainfall & stream flow data to be given) - Construct flood hydrograph from a given unit hydrograph for two or more periods of rainfall - Compute flood discharge from flood hydrograph. **(c) Advance Water Application Methods** - Compute Field Capacity - Compute Water Application Efficiencies - Compute water requirement of crop with effective root zone depth. **(d) Sea Water Intrusion** - Compute depth of interface & DRAW the sketch.	10

2	**Sketch work and Data collection :** **(a) Introduction:** - Collect the data regarding available W.R. of your district/state and Compare & Conclude **(b) Hydrology:** - Draw Hydrologic cycle Runoff - Draw unit hydrograph - Draw flood hydrograph **(c) Advance Water Application Methods:** - Classes & availability of soil water - Draw the graph of application of water V/S optimum plant growth - Layout of drip irrigation - Layout of sprinkler irrigation **(d) Groundwater:** - Draw diagram of Structures for various methods of artificial recharge **(e) Seawater Intrusion:** - Draw interface diagram and its stages **(f) Water Shed Management:** - Draw the sketches of - Rain water harvesting structures. - Roof top water harvesting in urban area. - Cheek dam - Nala / gully plugging - Percolation tank - Recharge well bore.	**Home work** Neat and clean with detailing, in sketch book)

3	**Designs:** **(a) Advance Water Applicationmethods:** - Enlist and briefly explain the Design Steps and parameters of Drip OR Sprinkler irrigation method - Enlist and briefly explain the Design Steps and parameters of surface drainage for given discharge **(b) Watershed Management:** - Compute Dimensions of check dam(gravity type) across a natural drain (Max. Height =3.0 m.) -Design of a Recharge Bore well.	10
4	**Visits :** **(a) Introduction:** -Visit to any W.R. Project . -Visit to W.R. department for collecting existing W.R. data of a district Hydrology - Visit of meteorological department to collect data, observe, and interpret rainfall data. (b) **Advance Water Application Methods:** - Visit the farm field where Drip OR Sprinkler irrigation method is implemented. **(c) Watershed Management:** - Visit to any rainwater harvesting/recharging structure	As per convenience of Staff and College.
5	**Seminar:** Select any one topic with the guidance of teacher & present the Seminar for at least 15 to 20 minutes, before teachers & students.	**08**

Note:

(1) Above visits should be arranged according to the convenience.
(2) Visits should be associated with the **detailed report** of the visited site.

Term Work :

1. Term work should also include certification by subject teacher and counter signed by HOD. With all above exercises sr.no. 1 to 5.
2. Viva is to be defended (along with term work) with practical examination by external and internal examiners .Practical examination will include followings:

- **Viva**
- **Explanation of terminologies associated with Water Resources Management.**