

LECTURER: DR. A. A. AMORI
DEPARTMENT OF WATER RESOURCES MANAGEMENT
AND AGROMETEOROLOGY

COURSE: **WMA 313: HYDRO-METEOROLOGICAL INSTRUMENTATION AND NETWORK DESIGN**

WEIGHT: **2 UNITS**

MODULE

I. **NATURE OF HYDRO-METEOROLOGICAL DATA**

- Types of Data
- Weather Elements Observed & Measured
- Rainfall, Humidity, Evaporation

MODULE

II. **DATA COLLECTION METHODS IN HYDRO-METEOROLOGY**

- Establishment of Hydro-met stations
- Conditions
- Operations
- Data Gathering & Recording Methods

MODULE

III **HYDRO-METEOROLOGICAL STATIONS**

- Types
- Attributes
- Conditions for Siting and Establishment

MODULE

IV **OPERATION OF HYDRO-METEOROLOGICAL STATIONS**

- Operational Guidelines
- Staffing
- Locational Decisions
- Problems

MODULE

V. **INSTRUMENTATION IN HYDRO-METEOROLOGICAL STATIONS**

- Types of Instruments in a Hydro-Meteorological Station
- Installation Guidelines
- Calibration of Instruments
- Repair and Maintenance

MODULE

VI. **DESIGN OF A NETWORK OF HYDRO-METEOROLOGICAL STATIONS**

- Critical Issues in the Design of Network of Hydro-meteorological Stations
- Principles Guiding Network Design
- General Requirements
- Problems in the Design of Network of Hydro-meteorological Stations

MODULE

VII. DATA COLLECTION IN A NETWORK OF HYDRO-METEOROLOGICAL STATIONS

- Types of Data to be collected
- Quality of Data to be collected
- Nature of Weather Observations
- Factors to be Considered in the Designs of a Network of Hydrological/Meteorological Stations

MODULE

VIII OPERATIONS OF A NETWORK HYDROMETEOROLOGICAL STATION

- Conditions for Network of Hydrometeorological Stations
- Factors facing Network of Hydrometeorological Stations
- Operational Schedules
- Staffing, finding and Instrumentation

NOTES

Hydrometeorology is a branch of meteorology and hydrology that seeks to study, analyze, predict and determine interactions that occur among some meteorological parameters such as rainfall, evaporation and temperature.

Hydrometeorological forecasting is a discipline that is based on the study of parameters relating to rain formation and how prediction can be made about their occurrence, distribution and impact on human living.

This aspect of modern meteorological seeks to generate and distribute information on the state of the weather especially as it has to do with rain formation and distribution.

In Nigeria not much attention has been placed on the effective study of related parameters and how they affect human activities.