

UNIT I

Earth's atmosphere – Composition – division of atmosphere; Sun-earth relationship – season, weather and climate; Pressure and global wind systems – cyclone and anticyclone; Condensation –precipitation, clouds, Frost and Indian monsoon.

UNIT II

Meaning and scope of Agricultural meteorology. Importance of weather and climatic parameters in agricultural production; Microclimate – yield-pest disease-weather relationship.

UNIT III

Climatic hazards in crop production – droughts, flood, dry spell, heat and cold wave and frost; Heat unit concept and its application in agriculture

UNIT IV

Evapotranspiration and its estimation; Weather forecasting, Types of weather forecasting, methods of weather forecasting, Satellite meteorology – Satellite systems: IRS and INSAT

UNIT V

Conventional techniques for measurement of meteorological parameters; Self-recording instruments – Automatic weather stations, Net work in Gujarat and data monitoring system; Agro-climatic zones of India in general and Gujarat in particular.

Practical

1. Study of meteorological observatories, its site selection and layout.
2. Study of different types of thermometers and psychrometers.
3. Study of rainfall and evaporation measurement instruments.
4. Study of radiation measurement instruments.
5. Study of wind measurement instruments.
6. Calculation of RH, VP and dew point temperature.
7. Estimation of heat indices.
8. Analysis of rainfall data for climatological studies.
9. Estimation of PET by Thornthwaite and Penman methods.
10. Estimation of net radiation using weather parameters.

Reference Books

1. Agrometeorology – J. H. Chang
2. Crops and Weather – by Venkatraman &
3. Climate, Weather, and Crop in India – by D. Lenka
4. Principles of Agricultural Meteorology – by Bisnoi O. P. (2007). Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi