

INSTITUTE	FACULTY OF AGRICULTURE
PROGRAM	BACHELOR OF SCIENCE (Hons.) AGRICULTURE
SEMESTER	1
COURSE TITLE	INTRODUCTORY AGRO METEOROLOGY & CLIMATE CHANGE
COURSE CODE	16AS0103
COURSE CREDITS	2

Objective:

- 1 To acquire basic knowledge of climate and weather and its impact on agriculture.
- 2 To find the recent problems related to climate change and solution that affects on agriculture.

Course Outcomes: After completion of this course, student will be able to:

- 1 Student will be able to articulate and retain knowledge relevant to meteorology.
- 2 Students will be able to gain the information of weather and climate which are considered as basic input in agricultural planning viz. land preparation, ploughing, harrowing etc.
- 3 Student will be able to explain weather hazards, weather forecasting and impact of climate change on agriculture.
- 4 Students will be able to acquaint with the meteorological instruments and recording the observation from the agro-meteorological observatory.

Pre-requisite of course:Basic knowledge about the weather and climate.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
1	0	2	50	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	Meaning and scope of agricultural meteorology Meaning and scope of agricultural meteorology	1
2	Earth atmosphere its composition, extent and structure Earth atmosphere its composition, extent and structure	1
3	Atmospheric weather variables Atmospheric weather variables	1
4	Atmospheric pressure, its variation with height Atmospheric pressure, its variation with height	1

Contents : Unit	Topics	Contact Hours
5	Wind, types of wind, cyclone, anticyclone, Land breeze and sea breeze Wind, types of wind, cyclone, anticyclone, Land breeze and sea breeze	1
6	Atmospheric temperature, Atmospheric humidity, concept of saturation, vapor pressure, process of condensation Atmospheric temperature, Atmospheric humidity, concept of saturation, vapor pressure, process of condensation	1
7	Formation of dew, fog, mist, frost and cloud Formation of dew, fog, mist, frost and cloud	1
8	Precipitation, types of precipitation such as rain, snow, sleet and hail. Precipitation, types of precipitation such as rain, snow, sleet and hail.	1
9	Cloud formation and classification Cloud formation and classification	1
10	Monsoon mechanism and importance in Indian agriculture Monsoon mechanism and importance in Indian agriculture	1
11	Weather hazards- drought, floods, frost, tropical cyclones and extreme weather conditions such as heat- wave and cold wave Weather hazards- drought, floods, frost, tropical cyclones and extreme weather conditions such as heat- wave and cold wave	1
12	Agriculture and weather relations Agriculture and weather relations	1
13	Weather forecasting- types of weather forecast and their uses Weather forecasting- types of weather forecast and their uses	1
14	Climate change, global warming, causes of climate change and its impact on regional and National agriculture Climate change, global warming, causes of climate change and its impact on regional and National agriculture	1
Total Hours		14

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	Measurement of Bright sunshine hours, total, shortwave and long wave radiation Measurement of Bright sunshine hours, total, shortwave and long wave radiation	2
2	Measurement of maximum, minimum air temperature and soil temperature Measurement of maximum, minimum air temperature and soil temperature	2

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
3	Measurement of wind speed and wind direction, preparation of wind rose Measurement of wind speed and wind direction, preparation of wind rose	2
4	Determination of vapor pressure and relative humidity Determination of vapor pressure and relative humidity	2
5	Measurement of rainfall Measurement of rainfall	2
6	Analysis of rainfall data for climatological studies Analysis of rainfall data for climatological studies	2
7	Measurement of Pressure Measurement of Pressure	2
8	Estimation of heat indices Estimation of heat indices	2
9	Measurement of open pan evaporation Measurement of open pan evaporation	2
10	Computation of PET and AET Computation of PET and AET	2
Total Hours		20

Textbook :

- 1 NA, NA, NA, NA

References:

- 1 Fundamentals of Agrometeorology, Fundamentals of Agrometeorology, Mahi, G.S. and Kingra, P.K., Kalyani Publishers, New Delhi., 2015
- 2 Agrometeorology , Agrometeorology , Reddy, S. R. and Reddy, D.S., Kalyani Publishers New Delhi., 2008
- 3 Comprehensive Agrometeorology, Comprehensive Agrometeorology, Mahi, G.S. and Kingra, P.K. , Kalyani Publishers New Delhi., 2014
- 4 Introduction to Agriculture and Agrometeorology, Introduction to Agriculture and Agrometeorology, Reddy, S. R. , Kalyani Publishers New Delhi., 2014

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking
25.00	25.00	20.00	10.00	10.00	10.00

Instructional Method:

- 1 The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board may also use any of tools such as demonstration, role play, quiz, brainstorming, MOOCs etc.
- 2 The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.
- 3 Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.
- 4 Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.