COURSE CONTENTS
B.Sc. (Ag) First Year Odd Semester

S. No.	Course Title	Credit Hrs	Theory		Practical	Total
			Ex.	Int.		
1.	Elementary Statistics	1+1	35	15	25	75
2.	Agriculture Meteorology	1+1	35	15	25	75
3.	Computer Application	1+1	35	15	25	75
4.	Str. & Spoken English	1+1	35	15	25	75
5.	Elementary Agriculture/Elementary Biology/ Elementary Mathematics (Only one depending on subjects in10+2 standard)	2+1	35	15	25	75
6.	Principles of Agronomy	2+1	35	15	25	75
7.	Rural Sociology & Educational Psychology	2+1	35	15	25	75
Total		**10+7=17**	**245**	**105**	**175**	**525**

Paper I: Elementary Statistics

Introduction to statistics, arithmetic mean, median, mode and partition values, range, inter quartile range, quartile deviation, mean deviation, variances, standard deviation, coefficient of variation, moments, skewness, kurtosis and its measure; Definition of probability, Simple problems based on probability theory; Definition of correlation; Scatter diagram; Karl Pearson's coefficient of correlation; Linear regression equations; Introduction to test of significance, one sample and two sample test for mean.

Practical

Based on Graphical representation of data, measure of dispersion raw & central tendency, partition value, measures of dispersion & central moments, measure of skewness & kurtosis, correlation and regression analysis, application of one sample t-test and fisher's sample t-test.

Paper II Agriculture Meteorology

Earth atmosphere-its composition, extent and structure; Atmospheric weather variable; pressure, its variation with height; Daily and seasonal variation of wind speed and direction. Cyclones and anticyclones, air masses and fronts; Nature and properties of solar radiation, solar constant, depletion of solar radiation, short wave and thermal radiation, albedo; atmospheric temperature inversion, daily and seasonal variation of temperature balance of earth; atmosphere humidity; concept of saturation, vapour process of condensation, formation of dew, fog, mist, frost, snow

rain and hail; precipitation, cloud formation and movement. Agriculture and weather relation; Modification of crop microclimate, use of weather data for irrigation scheduling, pesticides sprays, fertilizer application; climatic normals for crop production.

Practical

Visit to agro-meteorological observatory and its site selection, installation and exposure of various instruments, weather data recording, measurement of total solar radiation, short wave and long wave radiation, albedo and sunshine duration maximum and minimum, air temperatures, soil temperature, dew point temperature, Determination of vapor pressure, relative humidity, atmospheric pressure, wind speed and evapo-transpiration. Processing, tabulation and presentation of weather data.

Paper III Computer Application

Introduction to personal computer, peripherals, operating system (DOS & Windows) and high-level language, Introduction with software packages (Lotus, FoxPro, Statistical, Packages) and its execution for the following application; solution of simultaneous equations, plotting of graph and diagram, Simple agricultural statistics computation, Database file; creation and query.

Practical

Demonstration of working of computer system, MS-DOS, MS windows commands and utilities, writing sample software for agricultural problems, basic programmes, practice for ploting graphs based on various agricultural data.

Paper IV Structural and Spoken English

Structural patterns of communicative grammar, modern usages; functional language, verb, adjective, adverb, preposition, conjunction; articles; word formation and vocabulary building-affixes, prefix, suffixes, synonyms, antonyms, substitutions and foreign words; prepositions; phrases & idioms; gerunds; participles; infinitives; time and tense; modal verbs, conditional parifies; synthesis; transformation controlled writing; paragraph writing; study of modern technical prose; listening and reading skills; comprehension; phonetic and scientific system of spoken english and speech mechanism; symbol and sound; stress and intonations.

Practicals

Speech mechanism speech event, production of speech organs; phonetic sound symbols-pure vowels; diphthongs; consonants(voiceless/voiced, accented/unaccented, aspirated/ un aspirate); stress and intonation word accent (syllable, consonant clusters), stress shift, compound word, word accent in Indian English Vs R sonant clusters; stress shift, compound word; word accent in

English VS RP; rules for accentual patterns; accent in connected speech rhythm; weak forms; intonations-falling tone; rising falling tone; listening comprehension; skill sear training.

Paper V

Any one unit of the following is to be opted by the student depending on subjects in intermediate level

Unit I. Elementary Agriculture

Indian Agriculture-scope and resources; crop plants-their significance as source of food, feed, fuel and raw material for various industries; crop seasons and classification of crop according to season. Cultivation of important crops in the state such as wheat, rice, cotton. Sorghum, maize, groundnut, rape seed & mustard, chickpea, pigeonpea, tobacco, berseem, potato and sugarcane. General acquaintance with horticultural crops such as cabbage, apple, mango, litchi, citrus, guava.

Soil-their formation, classification, physical and chemical properties; manures and fertilizers-essential plant nutrients, uptake of N,P, & K by important crops, methods of manure & fertilizer application, composition of bulky organic manures, concentrated organic manures, green manures and various types of inorganic fertilizer.

Introductory economics-Factor of production, exchange, different types of markets; pricing, bank and credits, law of diminishing returns, place of agriculture in five year plans. Statistics relating to agricultural production.

Study of main breeds of animals such as cows, buffaloes, goats, sheep and poultry. Elementary physiology and anatomy of cow and buffaloes. Characteristics of milch cattle. Care of animal, poultry management, principles of nutrition and common medicines.

Types of iron and steel used in agricultural implements; different water lifting devices, tillage, different methods of ploughing. Power transmission through belts, pullies, gears, chaff, cutter, cane crusher. Necessity for drainage, damage to soil due to excess moisture, land development, prevention and formation of acidic and alkalie soils. Irrigation and drainage-importance of water, quality of irrigation water; sources methods and measurement of irrigation water, disadvantages of excessive soil moisture necessity and methods of drainage.

Practical

Identification of important crops, crop seeds, common fertilizers and agricultural chemicals, crops weeds, farm implements and acquaintance with irrigation resources and instruments. Acquaintance with vegetable and horticulture crops and their management, study of main cattle breeds and their management and also visit to livestock centers and laboratories. Practical

knowledge of seed bed preparation and other recent agronomic practices of main crops, visit to agricultural museum and meteorology observatory estimation of yield and cultivation cost of main field and horticultural crops, study of different type of markets and banks including their visits.

Unit 2 Elementary Biology

Introduction to the living world, diversity of life, characteristics of life, system of classification, binomial nomenclature, main groups of animals from protozoa to mammals. Diversity of plants, classification, brief study of algae, fungi, bryophytes, pteridophytes, gymnosperms and angiosperms, morphology of root, stem leaf, inflorescence, flower. Germination, systematics and ecology. Structure of cell, cell division, heredity and genetics, origin of life and evolution. Histology and physiology of rabbit.

Practical

Important characters of algae, fungi, bryophytes and gymnosperms. Morphology of flowering plants and their parts i.e. root, stem and leaf of both dicots and monocots. Families- cruciferae, leguminosceae, Compositeae and Gramineae. Field trip. Study of specimens and slides from protozoa to mammals. Cell division and tissues. Histology and skeletal system of rabbit.

Unit 3 Elementary Mathematics

Co-ordinates; Distance between two points, coordinates of a point division of straight line joining two points, area of triangle and quadrilateral, equations of straight line, change of axes, circle, parabola and ellipse. Simple problems based on them.
Functions: Limit continuity, differentiation, equations of tangent and normal, maxima and minima, Methods of integration including integration by parts. Define integral, application of definite integrals in finding areas under curves.
Determination: Matrices, matrix addition and matrix multiplication, trans–pose of matrix, solution of liner equation using crammers rule.

Paper VI Principles of Agronomy

Agronomy as a science and its scope, plant growth and development, environmental effects on crop growth, ideal plant type, tillage seed quality, sowing, crop density and spatial arrangement, crop nutrition, organic manures and fertilizers, irrigation and drainage, weed management, distribution of crops, cropping system, selection of crops and varieties for multiple cropping,

crop yield contributing character; Organic farming concept, practices and scope in India; Crop production in dry lands, salt affected, acidic, flood affected, waterlogged and eroded areas.

Practical

Sowing techniques of different crops, effect of seeding depth on germination and seedling vigor, weeds and weed control experiments, top dressing of nitrogen, layouts, design and statistical techniques used in field experimentation, yield contributing characters and yield estimation, germination and viability test, forge crops and important experiments at LRC, numerical exercises on requirement of fertilizer, plant population and herbicides, tillage implements, morphological description of major crops, irrigation water measurement by Parshall flume and calculation of time required to irrigate unit are, preparation techniques of charts and diagram and preparation of cropping scheme for a given farm.

Paper VII. Rural Sociology and Education Psychology

Concept, method, tools, characteristics of rural society and people; rural-social continuum and difference, rural social stratification: status, roles, class, castes etc.

Panchayati Raj and Block Development Organization as rural people's participative agencies for planned development.

Specific program for rural area upliftment/ employment: JRY, IAT, EAS, MWS, IRDP, GKY, DWCRA, TRYSEM, DPAP, NSAP, Land reforms, etc. Council for Advanced of peoples action and rural Technology (CAPART), National Fund for Rural Development (NFRD), NGOs/Voluntary Sector.

Conceptual clarification on educational psychology, Psychology of individual difference- MA & IQ; the gifted, Slow Learner and socially disadvantaged child, hygiene and adjustment, guidance and counseling.

Practical

Socio economic survey and study about its tools, study about rural social institutions, Visit to Panchayati Raj institutions (any one tier of Panchayati Raj system), and measurement of IQ.