



INSTITUTE OF AGRICULTURAL SCIENCES

Programmes Offered

1. Bachelor of science (hons) Agriculture

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Programme Outcome

- PO-1.** To gain knowledge of different streams of agriculture like agronomy, entomology, plant breeding, plant pathology, soil science etc. in practice.
- PO-2.** To study the competent professionally with ethical responsibility as an individual as well as in multidisciplinary teams with positive attitude.
- PO-3.** To devise communication and extension methodologies for transfer of Agricultural Technologies.
- PO-4.** To identify, critically analyzes, formulate and solve agriculture economics and marketing problems to benefit farmers.
- PO-5.** To able to design a system and process to meet desired needs of food and nutrition with the knowledge of protected cultivation and Post-Harvest Technology.

Programme Specific Outcome

- PSO-1.** Agriculture programme is designed to prepare graduates to attain the following outcomes:
- PSO-2.** An ability to apply knowledge of different streams of agriculture in practice. An ability to critically analyzes and solve marketing problems.
- PSO-3.** An ability to design a system to meet desired needs of food and nutrition.
- PSO-4.** An ability to devise and conduct experiments, interpret data and provide well informed conclusions.

Semester-1

Paper 1 Fundamentals of Horticulture

Course Outcomes

- CO-1.** Be able to develop commercially nursery and orchard.
- CO-2.** Be able to develop new plant through training, pruning, tree form function

Paper 2 Fundamentals of Plant Biochemistry and Biotechnology

Course Outcomes

- CO-1.** Knowledge of production of micro-propagation and DNA finger printing.
- CO-2.** Knowledge of concepts and applications of plant biotechnology.
- CO-3.** Clear understanding of structures of Monosaccharides

Paper 3 Fundamentals of Soil Science

Course Outcomes

- CO-1. Knowledge of soil profile in field, taxonomy, classification of soils of India.
- CO-2. Knowledge of soil sampling tools and collection and storage of the representative sample for soil testing.
- CO-3. Determination of soil reaction which include pH, EC and OC.
- CO-4. Estimation of soil physical properties, soil texture, structure, density, porosity, soil colour, consistency and plasticity
- CO-5. Knowledge of soil problems like acidic, saline and alkaline.

Paper 4 Fundamentals of Plant Biochemistry and Biotechnology

Course Outcomes

- CO-1. Gain knowledge of treespecies.
- CO-2. Knowledge of nursery lay-out forforestry.
- CO-3. Maintenance of forestproducts.

Paper 5 Comprehension & Communication Skill In EnglishCourse

Outcomes

- CO-1. Importance of professionalwriting.
- CO-2. Knowledge about oral presentation ofreports.
- CO-3. Understanding readingskills.

Paper 6 Fundamentals of Agronomy C

Course Outcomes

- CO-1. Basic knowledge of branches ofagriculture.
- CO-2. Basic elements of climate and weather required for cropproduction.
- CO-3. Understanding of cultivation process of crops likewise plantgeometry.

Paper 7 Elementary Mathematics

Course Outcomes

- CO-1. To able to calculate and analysis date for statisticalanalysis.
- CO-2. To able the Addition Subtraction, Multiplication andTranspose.
- CO-3. To study Straight lines and slope-point form of equation of line also.

Paper 7 Introductory Biology

Course Outcomes

- CO-1. Gain knowledge living organism their origin, evolution & diversity
- CO-2. Knowledge of Functions of cell, Seed & important plant kingdom families of flowering plants.

Paper 8 Agricultural Heritage Credits

Course Outcomes

- CO-1. Knowledge of crop scenery in India and world
- CO-2. Knowledge of national agriculture setup in India.

Paper 9 Rural Sociology & Educational Psychology

Course Outcomes

- CO-1. To understand the different programmes of Agriculture Extension
- CO-2. To study the Sociology and Rural Sociology understand the social structure and social groups.
- CO-3. To understand the rural leadership.
- CO-4. To understand the Psychology and Educational Psychology.

Paper 10 Rural Sociology & Educational Psychology

Course Outcomes

- CO-1. After completing this module, the students will inculcate various human values and professional ethics.
- CO-2. Student will be able to take better decisions and lead a happy and successful life.

Semester-2

Paper 1 Fundamentals of Genetics

Course Outcomes

- CO-1. Familiarity with Quantitative traits and Qualitative traits. Knowledge improvement of Cytoplasmic inheritance.
- CO-2. Basic understanding of chromosome structure, morphology, Karyotype and Idiogram.
- CO-3. Understanding the numerical chromosomal aberrations (Polyploidy) and evolution.
- CO-4. Knowledge of Gene expression regulation and differential gene activation.

Paper 2 Agricultural Microbiology

Course Outcomes

- CO-1. Information about soil microbiology.
- CO-2. Understanding plant microbe interactions.
- CO-3. Metabolism and nutrition in bacteria.
- CO-4. Knowledge of food preservation.

Paper 3 Soil and Water Conservation Engineering

Course Outcomes

- CO. To understand different types of soil and water conservation methods.

Paper 4 Fundamentals of Crop Physiology

Course Outcomes

- CO-1. To understand seed structure and seed physiology.
- CO-2. To understand the seed germination and purity percentage of seed

Paper 5 Fundamentals of Agricultural Economics

Course Outcomes

- CO-1. To understand different types of activity of Economics & Agricultural Economics.
- CO-2. To understand the importance & scope of Agricultural Economics
- CO-3. Find the cost of cultivation & cost of production

CO-4. To obtain information on Indian Agricultural Economics.

Paper 6 Fundamentals of Plant Pathology

Course Outcomes

CO-1. To get Knowledge about various types of plant pathogens.

CO-2. Information on pathogenicity, pathogenesis and infection, its related symptoms.

Paper 7 Fundamentals of Entomology

Course Outcomes

CO-1. Be able to relationship of biotic and a biotic factor in insect lifecycle

CO-2. Be able to design basic statistical analyses and evaluate statistical information of insect forecasting

CO-3. Be able to apply and judge the scientific method of pest control in the laboratory and in the field

CO-4. To understanding of the primary literature in entomology and be able to critically evaluate information in primary research articles.

CO-5. Be able to apply actual doses of insecticides to maintain pesticides hazards, environmental pollutions and soilpollutions.

Paper 8 Communication Skills and Personality Development Credits

Course Outcomes

CO-1. After completing this course, the students will develop excellent verbal and non-verbal communication skills, and will be having an effective personality full of confidence to face the challenges of life.

CO-2. Developing effective personality personal communication skills.

Paper 9 Fundamentals of Agricultural Extension Education

Course Outcomes

CO-1. To understand the different programmes of Agriculture Extension.

CO-2. To study the Rural Sociology and understand the social structure and social groups.

CO-3. To understand the rural leadership.

Semester-3

Paper 1 Crop Production Technology-I (Kharif Crops)

Course Outcomes

CO-1. Knowledge of economic and geographical distribution of field crops.

CO-2. Knowledge of cultivation practices of field crops.

CO-3. Knowledge about best practices of cultivation.

Paper 2 Fundamentals of Plant Breeding

Course Outcomes

CO-1. Understand the various genetic principles and procedures of crop improvement.

CO-2. Knowledge gained about modes of reproduction for deciding various genetic improvement aspects of crop species.

CO-3. Be familiar with the principles and methods of various plant breeding methods.

CO-4. Gaining knowledge about various plant genetic resources.

CO-5. Knowledge gained about evaluate the economic importance of various crops with plant breeding point of view.

Paper 3 Agricultural Finance and Co-Operation

Course Outcomes

CO-1. Clear understanding agril. finance & credit

CO-2. Knowledge the different commercial banks, RRB & NABARD bank activity.

CO-3. Understanding the need & classification of credit

Clear understand the different types of credit & credit analysis like 3“R”, 5 „C” & 7P”s

CO-4. Knowledge the nationalization of commercial bank.

CO-5. To understand the higher financing agencies such as RBI, ADB (Asian development bank), World bank, insurance

Paper 4 Agricultural Informatics

Course Outcomes

CO-1. Basic knowledge of computer and agricultural informatics.

CO-2. Perfection in practicing WINDOWS Operating Systems and other agriculture informatics software and devices.

Paper 5 Farm Machinery and Power

Course Outcomes

CO-1. Knowledge of agricultural machineries.

CO-2. Knowledge of equipments in used in organic and inorganic farming.

Paper 6 Production Technology for Vegetable and Spices

Course Outcomes

CO-1. To give knowledge about the production technology of spices, medicinal and aromatic plants.

CO-2. To give knowledge about the site selection of nursery and their management.

Paper 7 Environmental Studies and Disaster Management

Course Outcomes

CO-1. Knowledge about management of flood, earth quack, cyclone and land slides.

CO-2. To knowledge about how to control the pollution.

Paper 8 Statistical Methods

Course Outcomes

CO-1. Enhanced Collection of Statistical Data. Formation of Frequency Distribution.

CO-2. Improvement in the Information about Sampling, Sampling Distribution and Standard Error.

CO-3. Enhanced Knowledge of Sample Surveys in Agriculture.

Paper 9 Livestock & Poultry Management

Course Outcomes

After study of this subject the students will be able to differentiate between various breeds of livestock and poultry and will be able to manage livestock and poultry units professionally.

Paper 1 Crop Production Technology-II (Rabi Crops)

Course Outcomes

- CO-1. To knowledge the best cultivation uses in cultivation enics and animals' roles in agriculture.
- CO-2. To able cost-effective crops for increase economic level of India Enhanced Knowledge of Sample Surveys inAgriculture.
- CO-3. To calculate the accurate doses of herbicides and pesticide an application in crops.
- CO-4. To knowledge about the NUE increase in rabi season crops.

Paper 2 Production Technology for Ornamental Crops, Maps and Landscaping

Course Outcomes

- CO-1. Be able to develop gardens different types of mughal, Japanese, Persian through gardening.
- CO-2. Be able to develop landscaping different style of formal, free, wild and informal garden through gardening.
- CO-3. To able to develop lawn for recreation and garden beautification feeling a natural way.
- CO-4. To give knowledge about the production technology of medicinal and aromatic plants.
- CO-5. To give knowledge about the site selection of nursery and their management.

Paper 3 Renewable Energy and Green Technology

Course Outcomes

- CO-1. Knowledge of production of Liquid bio fuel.
- CO-2. Knowledge of wind energy and their mills.
- CO-3. Clear understanding of principles of agricultural wastes.

Paper 4 Problematic Soils and Their Management

Course Outcomes

- CO-1. Knowledge gained about soil quality and health.
- CO-2. Learnt about quality of irrigation water.
- CO-3. Received knowledge about Flooded and polluted soil.

Paper 5 Production Technology for Fruit and Plantation Crops

Course Outcomes

- CO-1. Be able to higher production using high yielding variety through high innovative practices.
- CO-2. Be able to handling and utilization of tropical and subtropical fruits through preservation and drying.
- CO-3. Be able to develop new variety and new species through propagation methods, selection and hybridation.

Paper 6 Principles of Seed Technology

Course Outcomes

- CO-1. Knowledge on Seed Production and Seedquality.
- CO-2. Production of nucleus & breeder's seed, Foundation and certified seedproduction.
- CO-3. Familiarize with Seed Act and Seed Act enforcement.
- CO-4. Informed about Intellectual Property Rights, Patenting, WTO, Plant Breeders Rights.
- CO-5. General principles of seed storage.

Paper 7 Farming System and Sustainable Agriculture

Course Outcomes

- CO-1. An ability to know the techniques for agricultures sustain ability.
- CO-2. To know the problem Soil, acid, Salt affected and calcareous Soil characteristics, and Nutrient availabilities.
- CO-3. To understand the different types of method of reclamation of mechanical, chemical and biological method.
- CO-4. To know the soil fertilizer application & recoup.

Paper 8 Agricultural Marketing Trade & Prices

Course Outcomes

- CO-1. Understanding of uncertainty and risk in marketing.
- CO-2. Knowledge of agricultural marketing, cooperative marketing.

Paper 9 Introductory Agro Meteorology & Climate Change

Course Outcomes

- CO-1. Understanding of bad effects of climatic change.
- CO-2. Knowledge of weather forecasting.
- CO-3. Knowledge about determination of vapor pressure and relative humidity.
- CO-4. Knowledge of measurement, tabulation and analysis of rain.

Paper 10 Biopesticides & Biofertilizers

Course Outcomes

- CO-1. History and concept of bio pesticides.
- CO-2. Importance, scope and potential of bio pesticides.

Semester-5

Paper 1 Principles of Integrated Pest and Disease Management

Course Outcomes

- CO-1. Gain knowledge of agro-ecosystem dynamics of insect pests & Diseases.
- CO-2. Integrated management of insect pests & diseases.
- CO-3. Identification of bio-control agents, different predators and natural enemies.

Paper 2 Manures, Fertilizers and Soil Fertility Management

Course Outcomes

- CO-1. Gained knowledge about fertilizers classifications and manufacturing.
- CO-2. Understand the complex fertilize, secondary and micro nutrient fertilizers.
- CO-3. Gained knowledge about mechanism of nutrient & transport to plant.
- CO-4. Learnt preparation methods of organic manures.

Paper 3 Pests of Crops and Stored Grain and Their Management

Course Outcomes

- CO-1. Distribution and biology of agricultural insect pest.
- CO-2. Knowledge of stored grain pests.

Paper 4 Diseases of Field & Horticultural Crops & Their Management-I

Course Outcomes

- CO-1.** Knowledge of field crops diseases of Rice, Maize, Sorghum, Bajra, and Ground nut.
- CO-2.** Knowledge of horticulture crops disease of Guava, Banana, and Papaya.
- CO-3.** Knowledge of Cruciferous vegetables crops disease.

Paper 5 Crop Improvement-I (Kharif Crops)

Course Outcomes

- CO-1.** Knowledge of crop improvement aspects in Kharif Crops.
- CO-2.** Learnings of climate resilient crop varieties considering global warming.

Paper 6 Entrepreneurship Development and Business Communication

Course Outcomes

After completing this course, the students will develop excellent verbal and non-verbal communication skills, and will be having an effective personality full of confidence to face the challenges of life

Paper 7 Geoinformatics And Nano-Technology and Precision Farming

Course Outcomes

- CO-1.** Better knowledge for the cultivation of precision agriculture.
- CO-2.** To identify the remote sensing concepts and application in agriculture.
- CO-3.** To knowledge the basic elements of crop production and their role in agricultural economy.
- CO-4.** To knowledge the nano-technology techniques.

Paper 8 Intellectual Property Rights

Course Outcomes

- CO-1.** Knowledge of intellectual property.
- CO-2.** Knowledge of legislations covering IPR in India.
- CO-3.** Clear understanding of breeders, researcher and farmers rights.

Paper 9 Applied Hi-Tech Horticulture

Course Outcomes

- CO-1.** Give basic knowledge nursery management and their mechanization.
- CO-2.** Give basic knowledge Micro irrigation systems, canopy management and high density orcharding.
- CO-3.** To give the basic knowledge mechanized harvesting of produce.
- CO-4.** To give the knowledge based on Remote Sensing, Geographical Information System.

Paper 10 Crop Production-I (Kharif Crops)

Course Outcomes

- CO-1.** To study best cultivation, use in cultivation of fabric crops
- CO-2.** To import knowledge on Eugenics and animals' roles in agriculture.
- CO-3.** To able cost-effective crops for increase economic level of India.
- CO-4.** To calculate the accurate doses of herbicides and pesticide application in crops.

CO-5. To study about the NUE increase in rabies as on crops

Semester-6

Paper 1 Rainfed Agriculture & Watershed Management

Course Outcomes

CO-1. Knowledge about mulching and its effects on soil moistures conservation.

CO-2. Knowledge about new water harvesting techniques.

CO-3. To solve the problems of dry land agriculture related to climate, soil, technological and socio-economic conditions.

Paper 2 Protected Cultivation and Secondary Agriculture

Course Outcomes

CO-1. Knowledge about low cost green houses equipments.

CO-2. Awareness of irrigation systems used in greenhouses.

CO-3. Understanding of drying and dehydration, air cleaner and grain dryer.

Paper 3 Diseases of Field & Horticultural Crops & Their Management

Course Outcomes

CO-1. Knowledge of disease cycle and management of field crops.

CO-2. Knowledge of symptoms, disease cycles of horticulture crops.

Paper 4 Post-Harvest Management and Value Addition of Fruits and Vegetables

Course Outcomes

CO-1. The acquired knowledge about the value addition (fruit & vegetable preservation).

CO-2. The get knowledge about the post harvest technology of fruit and vegetables.

CO-3. The get knowledge about fermented and non-fermented beverages.

Paper 5 Management of Beneficial Insects

Course Outcomes

CO-1. Gain the knowledge of beneficial insects and their economic importance.

CO-2. Knowledge of method and use soft he equipments for rearing and production of the honey, silk and lac.

CO-3. Identified of the different beneficial insects.

Paper 6 Crop Improvement (Rabi Crops)

Course Outcomes

CO-1. Acquired knowledge about improvement of various crops.

CO-2. To get knowledge about the hybrid seed production.

CO-3. To Acquired knowledge about the seed production technology.

Paper 7 Crop Production (Rabi Crops)

Course Outcomes

CO-1. To knowledge the field preparation, fertilizer application and sowing methods.

CO-2. To awareness moisture conservation nmethods.

CO-3. To understanding the hoeing and weeding methods.

Paper 8 Principles of Organic Farming

Course Outcomes

CO-1. To study the concept of organicfarming.

CO-2. To basis study of certification process and standards of organic farming.

CO-3. To study about processing, leveling, economic considerations and viability, marketing and export potential oforganic products.

Paper 9 Farm Management & Resource Economics

Course Outcomes

CO-1. Clear understanding crop and live stock enterprises.

CO-2. Knowledge of different types of farms.

CO-3. Knowledge of farm inventory and factor-product relationship.

CO-4. Determination of least cost combination of inputs.

Paper 10 Principles of Food Science and Nutrition

Course Outcomes

CO-1. Explain the chemistry underlying the properties of various food components.

CO-2. Knowledge the major chemical reactions that occur during food preparation and storage.

CO-3. Knowledge the important pathogens and spoilage micro organisms in foods.

Paper 11 Agri Business Management

Course Outcomes

CO-1. To study practical knowledge of agro based industries

CO-2. To study about working structure of agribusiness management.

Semester-7

Paper 12 Educational Tour

Course Outcomes

CO-1. Knowledge of rural setting in relation to agriculture and allied activities.

CO-2. Acquaintance of socio-economic conditions of farmers and theirproblems.

CO-3. Communication skills using extension teaching methods in transfer of technology.

CO-4. Development o f confidence and competence to solve agricultural problems.

Semester-8

Paper 12 Experiential Learning Programme/ (HOT)

Course Outcomes

CO-1. Professional skills and knowledge.

CO-2. Confidence and working in project mode.

CO-3. Knowledge of enterprise management capabilities