

Bachelor of Science (Honours) Agriculture (Session: 2020-21)

Programme Specific Outcomes

(PSO)– Upon successful completion of this course, students will be able to:

PSO1. Acquire, integrate, and apply the plant-science knowledge in a holistic manner needed for agriculturists.

PSO2. Develop interdisciplinary knowledge and have the ability to actually perform physical tasks that require practice and training.

PSO3. Develop creative skills to solve problems and improve current systems and can intervene to make improvements or correct deficiencies.

PSO4. Develop leadership skills and exhibit a high level of professionalism and effective communication.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACL-3011 PROBLEMATIC SOILS AND THEIR MANAGEMENT (THEORY)

COURSE OUTCOMES (CO): After passing this course student will be able to:

CO1: Learn about the soil quality, health, wasteland and problematic soils in India.

CO2: Learn about reclamation procedures of problematic soils and bioremediation.

CO3: Have knowledge about quality & standards of irrigation water and utilization of saline water in Agriculture.

CO4: Understand the importance of Remote Sensing & GIS in diagnosing and managing problem soils.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3012 FUNDAMENTALS OF PLANT BREEDING (PRACTICAL)

COURSE OUTCOMES (CO): After passing this course student will be able to:

CO1: Understand floral morphology of self and cross pollinated crops and germplasm variations.

CO2: Learn emasculation & hybridization techniques in self & cross pollinated crops CO3: Study different breeding methods for crop improvement and procedures for evaluating performance of crops CO4: Utilize statistical methods, various designs used in plant breeding

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3013

INTRODUCTORY AGROMETEOROLOGY & CLIMATE CHANGE (THEORY) COURSE OUTCOMES (CO):

After passing this course student will be able to:

CO1: Have understanding about earth's atmosphere, climate and weather parameters.

CO2: Learn about precipitation, monsoon status of India and concept of artificial rainmaking.

CO3: Learn about the significance of weather and weather hazards in crop production.

CO4: Understand the process of weather forecasting, climate change and its widespread impact on agriculture.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3013

INTRODUCTORY AGROMETEOROLOGY & CLIMATE CHANGE (PRACTICAL) COURSE OUTCOMES (CO):

After passing this course student will be able to: CO1: develop understanding about various meteorological instruments and their working. CO2: Acquire skills in measuring radiation, air and soil temperature, atmospheric pressure, wind speed and direction. CO3: Learn about determination of vapor pressure and relative humidity, dew point temperature. CO4: understand about evapotranspiration, soil water balance and rainfall variation and heat units and measuring precipitation

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3014 PRODUCTION

TECHNOLOGY FOR VEGETABLES AND SPICES (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Understand importance of vegetables & spices in human nutrition and national economy. CO2: Learn about origin, area, production, cultural practices and seed production of important vegetable groups. CO3: Learn about origin, area, production, cultural practices and seed production of important spices. CO4: Learn about harvesting technique and post-harvest handling and economics of commercial vegetable and spice cultivation.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3015 PRINCIPLES OF

SEED TECHNOLOGY (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about maintenance of genetic purity and quality seed production. CO2: Have sound knowledge of different breeding tools used in seed production CO3: Learn about different seed testing methods, the process of seed certification and seed act. CO5: Learn about seed processing, packing, storage, pest control and marketing.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3016 CROP

PRODUCTION TECHNOLOGY-I (KHARIF CROPS) (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about basic principles of crop production practices of kharif crops. CO2: Understand about cultural operations for raising kharif crops. CO3: Precisely

understand about qualitative and quantitative input requirements for Kharif crop production. CO4: Learn about various management practices for commercial crop production.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3016 CROP PRODUCTION TECHNOLOGY-I (KHARIF CROPS) (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Raise nursery of rice crop and do transplanting. CO2: Learn about sowing, nutrient requirements of various kharif crops. CO3: Realize the effect of seed size and sowing depth on germination of seeds and develop the idea of yield contributing factors and its calculation. . CO4: Identify various problematic weeds of kharif crops and their management.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3177 AGRICULTURAL FINANCE AND CO-OPERATION (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Understand the concept of Agricultural Finance & Agricultural credit. CO2: Have knowledge about various sources of agricultural finance and microfinancing. CO3: Learn about various finance institutions like NABARD, RBI, ADB, IMF, World Bank etc CO4: Describe the concept of Agricultural Co-operation in India.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3177 AGRICULTURAL FINANCE AND CO-OPERATION (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Analyse the progress and performance of co-operatives from published data. CO2: Acquire knowledge about management, schemes and procedures of commercial banks, co-operative banks and societies. CO3: Estimate the credit requirement of farm business, analyze balance sheet and income statement. CO4: Understand techno-economic parameters for preparation of projects and appraisal procedures of loan proposal.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3178 STATISTICAL METHODS (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Get introduced with Statistics and its application in Agriculture. CO2: Learn about graphical representation of data, measures of central tendency & dispersion, correlation & regression. CO3: Get familiarize with test of significance, chi-square test, ANOVA test etc. CO4: Know about various sampling methods.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3178 STATISTICAL METHODS (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about graphical representation of data. CO2: Practice measures of central tendency and dispersion of various forms of data. CO3: Get introduced with moments, correlation & regression analysis. CO4: Acquaint with the knowledge of one-sample and two-sample t-test, chisquare test. CO5: Learn about One way ANOVA.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3229

ENVIRONMENTAL STUDIES AND DISASTER MANAGEMENT (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Understand about value of natural resources like forest, water, minerals, energy, land and associated problems CO2: Basic ecological principles, ecosystem and its functions CO3: Learn about conservation of biodiversity, environmental pollution in relation with human population and other social issues. CO4: Learn all about natural as well as man made disasters and their management practices.

B.Sc. (Hons.) Agriculture (Semester-III) (Session: 2020-21) Course Code: BACM-3229

ENVIRONMENTAL STUDIES AND DISASTER MANAGEMENT (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Understand pollution problems through case studies and field work. CO2: Acquire skills in documentation of various environmental assets. CO3: Learn about biodiversity in relation to different habitats and study different ecosystem. CO4: Learn about dealing in emergency about with natural calamities

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACL-4011 FARMING

SYSTEM AND SUSTAINABLE AGRICULTURE (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Understand about cropping systems & patterns and evaluation methods. CO2: Recognize various tools for determining efficiency of farming systems.. CO3: Understand sustainable and conservation Agriculture problems and impact CO4: Understand value of Integrated Farming System and its models.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4012 PRODUCTION TECHNOLOGY FOR ORNAMENTAL CROPS, MAP AND LANDSCAPING (THEORY) COURSE OUTCOMES

(CO): After passing this course student will be able to: CO1: Learn about importance and scope of ornamental crops and MAPs. CO2: Know about principles of landscaping and landscape use of plants. CO3: Acquire knowledge about production technology of important cut flowers in both protected and open conditions. CO4: Learn about cultivation practices of loose flowers under open conditions, processing and value addition

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4012 PRODUCTION TECHNOLOGY FOR ORNAMENTAL CROPS, MAP AND LANDSCAPING (PRACTICAL) COURSE

OUTCOMES (CO): After passing this course student will be able to: CO1: Gain skills in identifying ornamentals, medicinal & aromatic plants. CO2: Learn to prepare nursery bed, seed sowing, training & pruning techniques. CO3: Design the layout of different styles of gardening. CO4: Post harvest management of ornamental crop flowers

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4013 RENEWABLE ENERGY & GREEN TECHNOLOGY (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Know about various types of energy & importance in Agriculture. CO2: Learn about biomass utilization, bio-fuel production and gasification CO3: Learn about wind energy, its types and application CO4: Familiarize with solar energy and its application and various solar gadgets.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4013 RENEWABLE ENERGY & GREEN TECHNOLOGY (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about biogas plants and gasifiers. CO2: Experience production process of bio-diesel & bio-fuels and about briquetting machine. CO3: Gain an understanding of solar cooker, solar drying system & solar distillation. CO4: Learn about performance of wind mill.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4014 PRODUCTION TECHNOLOGY FOR FRUITS AND PLANTATION CROPS (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about importance & scope of fruit and plantation crops. CO2: Develop understanding of use of rootstock and high density planting. CO3: Know about production technologies for cultivation of major and minor fruits. CO4: Plan and lay out of the orchard and its management.

B.Sc. (Hons.) Agriculture (Semester- IV) (Session: 2020-21) Course Code: BACM-4014 PRODUCTION TECHNOLOGY FOR FRUITS AND PLANTATION CROPS (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about scarification, stratification & propagation of seeds. CO2: Familiarize with propagation methods for fruit and plantation crops. CO3: Describe & identify fruits along with their pests, diseases and physiological disorders. CO4: Learn about preparation and usage of bio-regulators.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4015 FARM MACHINERY AND POWER (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about farm power machinery in India and its manufacturers. CO2: Learn about the fundamentals of 2-stroke & 4-stroke engine and operating system of tractor. CO3: Learn about primary & secondary implements and various sowing and intercultural operations. CO4: Learn about plant protection equipment and harvesting & threshing equipments.

B.Sc. (Hons.) Agriculture (Semester- IV) (Session: 2020-21) Course Code: BACM-4015 FARM MACHINERY AND POWER (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about different components of IC Engine. CO2: Get aware of various operational systems of tractor. CO3: Acquire knowledge about mould board, disc plough & disc harrow plough. CO4: Get familiarize with application of seed-cum-fertilizer drill, types of sprayers & dusters, harvesting & threshing machinery.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4016 CROP PRODUCTION TECHNOLOGY-II (RABI CROPS) (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Understand about crop husbandry of different kharif crops. CO2: Learn the scientific management of different field, cereals, pulses and oilseeds crops CO3: Understand agronomic practices of medicinal and aromatic crops. CO4: Learn about post-harvest management principles of cereals, pulses and oilseeds crops.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4016 CROP PRODUCTION TECHNOLOGY-II (RABI CROPS) (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about sowing practices of Rabi crops. CO2: Identify morphological differences of various rabi crops and their weeds. CO3: Understand yield contributing characters of rabi crops. CO4: Learn about forage crops and oil extraction from medicinal crops

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4017 LIVESTOCK AND POULTRY MANAGEMENT (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Understand role of livestock in rural household and Indian economy. CO2: Know about reproduction in farm animals & poultry. CO3: Familiarize with management principles of livestock & poultry. CO4: Learn about exotic breeds of livestock & poultry and disease management.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4017 LIVESTOCK AND POULTRY MANAGEMENT (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about planning and layout of housing for various types of livestock. CO2 Learn about management techniques of livestock and poultry CO3: Understand and develop formulation of concentrate mixtures for livestock. CO4 Learn about economics of livestock and poultry farm.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4128 AGRI-INFORMATICS (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about computers and various operating systems. CO2: Work with applications of MS office, database and use in Agriculture CO3: Use e-Agriculture and exploitation of ICT tools in Agriculture. CO4: Understand computer models for agricultural production.

B.Sc. (Hons.) Agriculture (Semester- IV) (Session: 2020-21) Course Code: BACM-4128 AGRI-INFORMATICS (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about computer and its various components and different operating CO2: Use MS Word, MS PowerPoint and MS Excel CO3: Acquire knowledge about World Wide Web as well as programming languages. CO4: Understand Crop Simulation Models and computation of water and nutrient requirements of crop IT tools

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4099 AGRICULTURAL MARKETING TRADE & PRICES (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Understand the concept, structure and classification of Agricultural Marketing. CO2: Have knowledge about meaning, stages, characteristics, strategies and pricing of product Life Cycle. CO3: Learn about role of Government in Agricultural Marketing. CO4: Describe concept of

International Trade and its need, present status and prospects of international trade in agri-commodities.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM-4099 AGRICULTURAL MARKETING TRADE & PRICES (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Study relationship between market arrivals and prices of commodities. CO2: Acquire knowledge about computation of marketable and marketed surplus of important commodities. CO3: Study various marketing functions performed by different agencies. CO4: Learn the application of principles of comparative advantage of international trade.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM- 4010 (OPT-I) BIOPESTICIDES & BIOFERTILIZERS (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Get introduced with the concept, importance and scope of biopesticide and biofertilizers. CO2: Know about characteristics of various biopesticides and biofertilizers. CO3: Familiarize with methods of application, production and quality control of biopesticides as well as biofertilizers. CO4: Learn about limitations and factors influencing efficacy of biopesticides and biofertilizers.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM- 4010 (OPT-I) BIOPESTICIDES & BIOFERTILIZERS (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about isolation and purification of biopesticides and biofertilizers. CO2 Learn about identification and multiplication of biopesticides. CO3: Understand the methodology of mass multiplication and inoculum production of biofertilizers. CO4 Learn about mass production of AM inoculations

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM- 4010 (OPT-II) LANDSCAPING (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Get introduced with the concept, importance, scope and principles of landscaping. CO2: Know about propagation, planting scheme and management of various ornamental trees, shrubs, climbers, herbaceous perennials, succulents etc. CO3: Familiarize with Bio-aesthetic planning and landscaping of urban, rural, peri-urban areas as well as schools, hospitals, industries, airport etc. CO4: Learn about principles and management of Bonsai as well as establishment of lawns.

B.Sc. (Hons.) Agriculture (Semester-IV) (Session: 2020-21) Course Code: BACM- 4010 (OPT-II) LANDSCAPING (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Learn about identification, propagation and maintenance of trees, shrubs, annuals, pot plants etc. CO2 Learn about identification of tools and implements used in landscaping. CO3: Get skills in layout of formal, informal and special type of gardens. CO4 Learn about use of computer software for landscaping

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5011 Crop Improvement-I (Kharif Crops) (THEORY) COURSE OUTCOMES (CO): After the course students will be able to: CO1: recognize the biodiversity in kharif crops and understand the floral morphology. CO2: identify characteristics of self- and cross-pollinated plants. CO3: master various techniques in varietal development in kharif crops. CO4: maintain the germplasm for the improvements in varieties

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5011 Crop Improvement-I (Kharif Crops) (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understanding floral biology of major commercial crops & various hybridization techniques. CO2: identify characteristics of self- and cross-pollinated plants. CO3: master various techniques in varietal development in kharif crops. CO4: maintain the germplasm for the improvements in varieties.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5012 Principles of Integrated Pest and Disease Management (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: develop an expertise in identification of crop pests, disease causing organisms and losses caused by them. CO2: analyze varied measures for management of pest and diseases in kharif crops. CO3: develop a plan for ecologically sound pest management tactics. CO4: justify the short and longer benefits of blended management approach for pests and diseases productivity

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5012 Principles of Integrated Pest and Disease Management (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: identify major insect pests and diseases of different crops. CO2: estimate plant diseases and yield losses of crops. CO3: develop strategies and tactics of IPM, pest monitoring and decision making. CO4: compare the benefits of pest and diseases management with IPM.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5013 Manures, Fertilizers and Soil Fertility Management (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: identify soil types and ways to improve soil fertility. CO2: interpret soil analytical data with a view to assess fertilizer requirements. CO3: chalk out strategies for using this information to guide farmers for soil management. CO4: work out the details for integrated soil nutrient management optimizing organic, inorganic and biological components.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5013 Manures, Fertilizers and Soil Fertility Management (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: interpret soil analytical data with a view to predicting fertilizer requirements. CO2: demonstrate advanced knowledge of the soil-plant system to improve plant growth and yield. CO3: interpret soil analytical data with a view to predicting fertilizer requirements. CO4: work out the details for integrated soil nutrient management optimizing organic, inorganic and biological components.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Pests of Crops and Stored Grain and Their Management (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: identify the insect pests on various crops and stored grains CO2: be judgmental in deciding about proper time of pest management based on bionomics and their nature of damage. CO3: select appropriate safe pesticide and calculate doses and techniques for pesticides applications. CO4: devise the pest management techniques in storage of grain and food products

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5014 Pests of Crops and Stored Grain and Their Management (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: identify the insect pests on various crops and stored grains. CO2: select appropriate safe pesticide and calculate doses and techniques for pesticides applications. CO3: devise pest management strategies for agricultural and horticultural crops. CO4: devise the pest management techniques in storage of grain and food products.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5015 Diseases of Field and Horticultural Crops and Their Management –I (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: acquire scientific knowledge about diseases and disorders of field & fruit crops. CO2: apply knowledge to identify and solve problems based on disease symptoms produced during different stages of field & fruit crops plant development. CO3: gain awareness about disease cycle of various pathogens associated with field & fruit crop disease. CO4: extend their knowledge over disease associated with tropical and temperate fruit crops.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5015 Diseases of Field and Horticultural Crops and Their Management –I (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: acquire scientific knowledge about diseases and disorders of field & fruit crops. CO2: apply knowledge to identify and solve problems based on disease symptoms produced during different stages of field & fruit crops plant development CO3: gain awareness about disease cycle of various pathogens associated with field & fruit crop disease. CO4: Gain familiarity with regard to field- and lab-based approaches for the diagnosis of diseases and pathogens in field & fruit crops.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5016 Post-Harvest Management and Value Addition of Fruits and Vegetables (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand the causes of postharvest loss and changes in fruits and vegetables. CO2: describe different storage techniques for horticultural produce. CO3: discuss principle and methods of processing or value addition. CO4: prepare value added product from fruit and vegetable

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5016 Post-Harvest Management and Value Addition of Fruits and Vegetables (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand the causes of postharvest loss and changes in fruits and vegetables. CO2: describe different storage techniques for horticultural produce. CO3: discuss principle and methods of processing or value addition. CO4: prepare value added product from fruit and vegetable.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5017 Principles of Organic Farming (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: learn about basic principles of organic farming. CO2: optimize the soil nutrients utilizing organic and biological means for raising kharif crops. CO3: precisely understand about qualitative and quantitative input requirements for Kharif crop production and ecologically sound. CO4: learn about various management practices for commercial crop production with more dependence on organic inputs.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5017 Principles of Organic Farming (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: identify the key components of organic farming. CO2: optimize the soil nutrients utilizing organic and biological means for raising kharif crops. CO3: precisely understand about qualitative and quantitative input requirements for kharif crop production and ecologically sound. CO4: analyze the information about the Operational structure of NPOP.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACP-5010 Practical Crop Production – I (Kharif crops) (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: describe intercultural operations of different kharif crops. CO2: grasp about cultural operations for raising kharif crops. CO3: demonstrate plant protection measures of different crops. CO4: calculate economics of different crops for commercial crop production.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5099 Entrepreneurship Development and Business Communication (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand entrepreneurship and business

start-up planning. CO2: prepare a concept to identify the business skills, potential team members, partners, customers and investors. CO3: develop a sound knowledge about legal and ethical business. CO4: analyze basic skills to start their enterprises communicate effectively both orally and in business writings as well deliver effective presentations.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5099

Entrepreneurship Development and Business Communication (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand entrepreneurship and business start-up planning. CO2: prepare a concept to identify the business skills, potential team members, partners, customers and investors. CO3: develop a sound knowledge about legal and ethical business. CO4: analyze basic skills to start their enterprises communicate effectively both orally and in business writings as well deliver effective presentations.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5018 (Opt-I)

Mushroom Cultivation (Theory) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: will gain necessary competencies for isolating and culturing the different species of edible fungus. CO2: develop mushroom spawn under lab conditions as pure culture. CO3: become skillful for mushroom cultivation under natural environmental conditions. CO4: identify the various pest and disease conditions in mushroom houses.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5018 (Opt-I)

Mushroom Cultivation (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: will gain necessary competencies for isolating and culturing the different species of edible fungus. CO2: develop mushroom spawn under lab conditions as pure culture. CO3: become skillful for mushroom cultivation under natural environmental conditions. CO4: identify the various pest and disease conditions in mushroom houses.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5018 (Opt-II) Micro

Propagation Technologies (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: learn about basic principles of crop production practices of kharif crops. CO2: understand about cultural operations for raising kharif crops. CO3: precisely understand about qualitative and quantitative input requirements for kharif crop production. CO4: learn about various management practices for commercial crop production.

B.Sc. (Hons.) Agriculture (Semester-V) (Session: 2020-21) Course Code: BACM-5018 (Opt-II) Micro

Propagation Technologies (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: demonstrate the knowledge of the tissue culture maintenance techniques. CO2: use lab equipment and develop expertise in culture media preparation sterilization and raising callus

from organ explants. CO3: successfully maintain cultures with good viability, minimal contamination and appropriate documentation. CO4: recognize and troubleshoot problems common to routine cell culture.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACL- 6011 PRINCIPLES OF FOOD SCIENCE AND NUTRITION (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand about various food groups, balanced diet, principles of meal planning and relationship between food, nutrition and health. CO2: understand and interpret about digestion, absorption and function of various nutrients and their sources. CO3: have a working knowledge about avoiding food spoilage and wastage. CO4: learn about food preservation methods

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACL- 6012 INTELLECTUAL PROPERTY RIGHTS (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand about basic concepts of Intellectual Property Rights (IPR). CO2: learn about legislations covering IPR in India. CO3: learn about UPOV for protection of plant varieties and PPV and FR Act in India. CO4: discuss the relevance and futuristic need for IPR.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6013 CROP IMPROVEMENT-II (RABI CROPS) (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand the diversity pattern in flowers of rabi crop CO2: apply knowledge for varietal development in crops CO3: grasp and interpret about various breeding technique for crop improvement CO4: learn and apply practical skills in plant breeding.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6013 CROP IMPROVEMENT-II (RABI CROPS) (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: differentiate and understanding the biodiversity pattern in rabi crops. CO2: develop and equip students with various breeding technique for crop improvement. CO3: discuss briefly about different techniques involved in varietal development in crops. CO4: apply knowledge and practical skills in plant breeding.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6014 MANAGEMENT OF BENEFICIAL INSECTS (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: Extend the knowledge on scope, importance and uses of beneficial insects. CO2: Learn the management methods in bee keeping, silk worm rearing. CO3: Learn the skills of bee keeping, silk worm rearing and lac production and Processing. CO4: Discuss the mass multiplication and field release of bio-agents.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6014 MANAGEMENT OF BENEFICIAL INSECTS (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: identify and realize the scope, importance and uses of beneficial insects. CO2: learn the management methods in bee keeping, silk worm rearing. CO3: learn the skills of bee keeping, silk worm rearing and lac production and Processing. CO4: learn the skill of mass multiplication and field release of bio-agents.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6015 RAINFED AGRICULTURE AND WATERSHED MANAGEMENT (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: grasp the fundamentals principles of rainfed agriculture and their application in agriculture. CO2: learn about watershed management. CO3: gain in depth knowledge about drought, crop adaptation and contingent crop planning for crops. CO4: have understanding about soil and climate conditions and soil conservation.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6015 RAINFED AGRICULTURE AND WATERSHED MANAGEMENT (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand rainfed agriculture and their application in agriculture. CO2: learn about watershed management and meteorological observations. CO3: learn the skill of assessing drought and crop adaptation and to develop contingent crop planning. CO4: have understanding about water harvesting structures and visit various sites.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6016 PROTECTED CULTIVATION AND SECONDARY AGRICULTURE (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: grasp the fundamental knowledge and learn the scope of protected cultivation. CO2: describe the components of protected structures. CO3: understand and plan the crop raising under green houses. CO4: practice raising crops under protected condition.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6016 PROTECTED CULTIVATION AND SECONDARY AGRICULTURE (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: grasp the fundamental knowledge and learn the scope of protected cultivation. CO2: describe the components of protected structures. CO3: understand and plan the crop raising under green houses. CO4: practice raising crops under protected condition.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6017 DISEASES OF FIELD & HORTICULTURAL CROPS & THEIR MANAGEMENT-II (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand in depth about diseases of horticultural and fruit crops in Rabi season and epidemiological favorable factors for disease development. CO2: understand the life cycle and perpetuation of field crop diseases. CO3: learn

about disease associated with tropical and temperate fruit crops. CO4: develop basic skill in disease diagnosis and identification.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6017 DISEASES OF FIELD & HORTICULTURAL CROPS & THEIR MANAGEMENT-II (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand in depth about diseases of horticultural and fruit crops in Rabi season and epidemiological favorable factors for disease development. CO2: understand the life cycle and perpetuation of field crop diseases. CO3: learn about disease associated with tropical and temperate fruit crops. CO4: develop basic skill in disease diagnosis and identification.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6018 FARM MANAGEMENT, PRODUCTION AND RESOURCE ECONOMICS (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand the basic and advanced farm management practices. CO2: apply the production function in decision-making for raising crop on a farm. CO3: prepare of farm records and accounts. CO4: identify risks and uncertainty in agricultural production.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6018 FARM MANAGEMENT, PRODUCTION AND RESOURCE ECONOMICS (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: understand the basic and advanced farm management practices CO2: apply the production function in decision-making for raising crop on a farm CO3: prepare of farm records and accounts CO4: identify risks and uncertainty in agricultural production.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6019 GEOINFORMATICS, NANO-TECHNOLOGY AND PRECISION FARMING (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: describe the basic concepts of remote sensing and geoinformatics. CO2: learn about tools and techniques of geoinformatics used in precision farming. CO3: learn about tools and techniques of nanotechnology in relation to agriculture. CO4: learn about tools and techniques of image interpretation.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6019 GEOINFORMATICS, NANO-TECHNOLOGY AND PRECISION FARMING (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: describe the basic concepts

of remote sensing and geoinformatics. CO2: learn about tools and techniques of geoinformatics used in precision farming. CO3: learn about tools and techniques of nanotechnology in relation to agriculture. CO4: learn about tools and techniques of image interpretation.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6020 (Opt-I) WEED MANAGEMENT (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: identify and classify different weeds. CO2: evaluate the different weed management practices in holistic manner. CO3: apply different types of herbicides in appropriate manner. CO4: identify the impact of allelopathy and its role in weed management

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6020 (Opt-I) WEED MANAGEMENT (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: identify and classify different weeds. CO2: evaluate the different weed management practices in holistic manner. CO3: apply different types of herbicides in appropriate manner. CO4: identify the impact of allelopathy and its role in weed management.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6020 (Opt-II) FOOD SAFETY AND STANDARDS (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: identify the importance of food safety, hygiene and associated risks. CO2: evaluate the different food safety management tools in holistic manner. CO3: apply for food quality management principles and regulation in appropriate manner. CO4: identify the impact of microbial contaminants for food and water.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6020 (Opt-II) FOOD SAFETY AND STANDARDS (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: identify the importance of food safety, hygiene and associated risks. CO2: evaluate the different food safety management tools in holistic manner. CO3: apply for food quality management principles and regulation in appropriate manner. CO4: identify the impact of microbial contaminants for food and water.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6020 (Opt-III) HI-TECH HORTICULTURE (THEORY) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: describe micro-propagation and protected cultivation of horticultural crops. CO2: understand hi-tech nursery management practices. CO3: apply the concept of precision farming in horticulture. CO4: learn and plan hi-tech harvest technology.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACM- 6020 (Opt-III) HI-TECH HORTICULTURE (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: describe micro-propagation and protected cultivation of horticultural crops. CO2: understand hi-tech nursery management practices. CO3: apply the concept of precision farming in horticulture. CO4: learn and plan hi-tech harvest technology.

B.Sc. (Hons.) Agriculture (Semester-VI) (Session: 2020-21) Course Code: BACP- 6010 PRACTICAL CROP PRODUCTION-II (RABI CROPS) (PRACTICAL) COURSE OUTCOMES (CO): After passing this course student will be able to: CO1: learn skill of scientific management of different crops. CO2: practice various intercultural operations for crop raising. CO3: practice plant protection operations needed for crop raising. CO4: observe post-harvest operations and work out economic benefits of crop raising.