College of Agriculture Science
Teerthanker Mahaveer University

B.Sc. (Agriculture)

Programme Outcome

PO-1	**:**	Understanding the concepts of agriculture for their practical utility in Indian context
PO-2	**:**	Understanding efficient utilization of agri-resources in farming
PO-3	**:**	Improving of communication and learning skills
PO-4	**:**	Analyzing strengths, weaknesses, opportunities and threats of modern technologies
PO-5	**:**	Analyzing site-specific and tactical solutions under ambient and stressful situations.
PO-6	**:**	Developing entrepreneurial skills and business management competence in agriculture and allied sectors.
PO-7	**:**	Developing team spirit and leadership quality for searching novel solutions of site specific agriculture

Programme Specific Outcome

PSO-1	**:**	Understanding the integrated management of sustainable agriculture, horticulture, vegetable science, forestry, agro forestry and livestock production.
PSO-2	**:**	Applying the tools and techniques of agronomy, soil science, plant pathology, and entomology and allied sciences for enhancing agriculture productivity.
PSO-3	**:**	Analyzing the information related to agricultural economics for finding solution for various problems.
PSO-4	**:**	Collaborating with farmers, industries and different types of institutions for devising useful solutions.
PSO-5	**:**	Evaluating the efficiency of various technologies for identifying better site specific solutions for agriculture sector
PSO-6	**:**	Developing competence in agricultural extension and managing different types of agricultural resources.
PSO-7	**:**	Developing entrepreneurial skills and business management competence in agriculture and allied sciences.
PSO-8	**:**	Developing entrepreneurial skill with using smart agri-practices in agribusiness module through Experience Learning Programmes

Course Outcomes

BAG 107	**CO-1**	Understanding the scope and practices of Agronomy.
	CO-2	Demonstrating the methods of irrigation, crop rotation, weeding in different crops.
	CO-3	Applying the method of seed sowing, tillage, weeding, irrigation, and crop management in problematic areas.
	CO-4	Analyzing the effect of weed-crop competition on agricultural productivity.
BAG 102	**CO-1**	Understanding the concept of soil and soil profile.

	CO-2	Explaining the concept of soil texture, soil taxonomy, soil water retention, movement and availability.
	CO-3	Analyzing the effect of pH on soil nutrient availability.
	CO-4	Identifying the macro and microorganisms and their effect on soil.
	CO-5	Examining the physical and chemical properties of soil.
BAG 104	**CO-1**	Understanding the concepts of horticulture including the management of water, weed, fertility, and market chain.
	CO-2	Explaining the vegetable gardens, orchards and their management practices.
	CO-3	Analyzing the weed management, fertility management, organic farming and production for fruit, vegetable and floriculture crops.
BAG 108	**CO-1**	Understanding the basic concepts and principles of forestry and agro-forestry systems.
	CO-2	Applying various methods, designs and techniques for the establishment of agro-forestry systems in different agro-climatic conditions.
	CO-3	Analyzing various procedures, methods and theories adopted for identifying, measuring and establishing the different agro-forestry systems.
	CO-4	Evaluating the different methodologies and techniques adopted for the development of agro-forestry systems for ensuring food security.
BAG 109	**CO-1**	Understanding the structure, functions and chemical nature of living systems
	CO-2	Understanding the application of the modern approaches of biotechnology in micro-propagation and crop improvement
	CO-3	Analyzing the qualitative and quantitative properties of various biomolecules.
BAG 110	**CO-1**	Understanding the concepts and scope of rural societies, groups, stratification, culture and social Institutions.
	CO-2	Recognizing the learning domains, personality and motivation in agriculture extension
	CO-3	Applying the educational psychology in agriculture extension.
	CO-4	Analyzing the personality, learning process and motivation in rural context
BAG 111	**CO-1**	Understanding the diversity and morphology of living world.
	CO-2	Explaining different levels of biological organizations
	CO-3	Identifying the specifications of important families of angiosperms
	CO-4	Evaluating the germination capacities of seeds of important crops
BAG 112	**CO-1**	Understanding the basic concepts of mathematics applied in agriculture
	CO-2	Applying the mathematical equations in various fields of agriculture science
BAG 113	**CO-1**	Understanding the principles, theories, practices and status of ancient and modern Indian agricultural systems.
	CO-2	Applying various traditional methods and techniques for plant production and protection in present day agriculture system.
	CO-3	Analyzing the effect of indigenous traditional knowledge on the development of modern agriculture system.

	CO-4	Evaluating the different ancient methodologies and techniques adopted for the development of Indian agriculture system.
TMUGE 114	**CO-1**	Understanding importance of English language.
	CO-2	Understanding the basics of communication
	CO-3	Applying the written communication skills.
BAG 154	**CO-1**	Analyzing the numerical exercises on fertilizer requirement
	CO-2	Understanding the proper application of seeds, fertilizers, pesticides and tillage
	CO-3	Applying the seed germination and viability test.
BAG 152	**CO-1**	Understanding and evaluating soil acidity and alkalinity with the help of pH meter.
	CO-2	Analyzing the physical properties of soil
	CO-3	Applying stokes' law for obtaining terminal velocity of a partial
BAG 153	**CO-1**	Understanding the identification scheme of garden tools and horticultural crops.
	CO-2	Applying the techniques of micro propagation in horticultural crops.
	CO-3	Applying different methods of pruning in fruit trees.
BAG 155	**CO-1**	Applying various designs and layouts of agro-forestry systems for maximizing the production and income in agriculture.
	CO-2	Applying the genetic and agronomic principles for growing various multipurpose tree species to achieve maximum economic yield per year
BAG 156	**CO-1**	Applying the approaches of biotechnology in micro-propagation and crop improvement.
	CO-2	Analyzing the qualitative and quantitative properties of various biomolecules.
	CO-3	Evaluating the optimum chemical conditions required for proper functioning of life
BAG 157	**CO-1**	Understanding the concept of morphology and anatomy of flowering plants for evaluating their different modifications
	CO-2	Applying the concepts of systematic botany to compare the family characteristics of agricultural crops
BAG 207	**CO-1**	Understanding basic concepts, theories and principles of genetics for improving yield and other attributing characters in crop plants.
	CO-2	Applying the methods and techniques of cyto-genetics to overcome various problems and drawbacks of plant breeding.
	CO-3	Analyzing various procedures, approaches and practices of qualitative and quantitative genetics adopted for the effective crop improvement programme.
	CO-4	Evaluating different methodologies and techniques used to enhance quality and yield of crops at genetic level.
BAG 208	**CO-1**	Understanding the basic aspects of plant health and disease caused by parasitic and non-parasitic pathogens
	CO-2	Understanding the plant disease management through chemical, cultural and biological practices
	CO-3	Identifying the importance of microorganisms in agriculture
BAG 209	**CO-1**	Understanding the classification, cause and type of soil erosion
	CO-2	Applying and analyzing the control measures for soil erosion

	CO-3	Understanding and analyzing soil loss by USLE (universal soil loss equation)
BAG210	**CO-1**	Understanding the physiological aspects of plant life and their impact on plant growth and development
	CO-2	Applying the concepts of crop physiology for developing good agricultural practices.
	CO-3	Evaluating the crop health and productivity through applying various parameters of crop physiology
BAG211	**CO-1**	Understanding the characteristics, diversity, importance, identification, structure, and function of class Insecta.
	CO-2	Explaining the evolutionary and ecological relationships of insects with other life forms.
	CO-3	Describing the principles and methods of managing insect pest populations.
BAG212	**CO-1**	Understanding the principles of extension programme in agriculture.
	CO-2	Applying various concepts and leadership skills for effective extension administration at village level.
	CO-3	Analyzing various procedures and ICT methods adopted for effective communication skills.
BAG213	**CO-1**	Understanding the principles, importance and application of economics in agriculture and allied sectors.
	CO-2	Explaining the market forms, various factors of production, money and demand- supply dynamics of commodities and its role in price determination
BAG231	**CO -1**	Understanding the basic components of computer, operating systems, an application programs.
	CO-2	Practicing various applications on computer like MS DOS, MS Office, and internet
TMUGE232	**CO-1**	Understanding the correct use of English grammar.
	CO-2	Applying non-verbal communication skills
	CO-3	Understanding strategies of oral presentation.
	CO-4	Applying correct writing techniques in official communication.
BAG253	**CO-1**	Applying the various principles and techniques of cytogenetics and molecular genetics.
	CO-2	Analyzing the information, creatively and imaginatively in seeking the solutions to overcome the challenges related to genetics.
	CO-3	Evaluating the effectiveness of the different mechanisms used to enhance genetic level of the crops.
BAG254	**CO-1**	Analyzing various signs and symptoms for proper identification of plant diseases through Koch's postulates
	CO-2	Analysis potential of beneficial plant associated microbes for enhancing plant growth and health
	CO-3	Understanding the laboratory setup and equipment used in microbiology.
BAG255	**CO-1**	Understanding and applying different concept of soil conservation
	CO-2	Understanding and evaluating the soil loss with the help of USLE
BAG256	**CO-1**	Applying various parameters of crop physiology for evaluating the crop health and productivity

	CO-2	Applying the concepts of crop physiology for developing good agricultural practices for enhancing sustainable crop productivity.
BAG257	**CO-1**	Applying the approaches of Entomology to carry out the identification, taxonomy and status of the insects.
	CO-2	Applying the concepts of Agricultural Entomology in the field of plant protection.
BAG258	**CO-1**	Understanding the principles and various steps of extensionProgramme planning in agriculture.
	CO-2	Applying various concepts and leadership skills for effective extension administration at village level.
	CO-3	Analyzing various procedures, methods and theories adopted for effective ICT to develop communication skills.
BAG308	**CO-1**	Understanding cultivation practices of kharif crops.
	CO-2	Understanding production technology of major cereals, pulses, oilseeds, fiber and forage crops.
BAG309	**CO-1**	Understanding the basic concepts, theories and principles of plant breeding
	CO-2	Applying various methods and approaches of traditional and advanced plant breeding
	CO-3	Analyzing various procedures, techniques and strategies for high quality seed production
	CO-4	Evaluating different methodologies and procedures used to increase in the productivity of field crops.
BAG310	**CO-1**	Understanding the importance of credit and role of financial institution in Indian Agriculture.
	CO-2	Describing the computer operating system and ICT tools and their application in Agriculture
	CO-3	Analyzing the agricultural credit and financial statements for the farmers and agri entrepreneur
BAG312	**CO-1**	Understanding the importance of vegetable & spice crops
	CO-2	Understanding the production technologies of roots, tuber and leafy vegetable crops
BAG313	**CO-1**	Understanding of various environmental aspects, biodiversity conservation and role of individual, NGOs and Government for environmental protection activities
	CO-2	Recognizing the importance of sustainable development and appropriate use of natural resources and maintaining the balanced ecosystem.
	CO-3	Discussing new techniques of development through Environmental Impact Assessment (EIA) to reduce the rate of consumption of natural resources
	CO-4	Analyzing various controlling measures of environmental pollution, ozone layer depletion, global warming and acid rain
	CO-5	Evaluating the importance of eco-friendly activities to maintain the quality of environment and human life
BAG314	**CO-1**	Understanding the basic concepts, uses & applications of statistics in agriculture.
	CO-2	Understanding, applying & analyzing the concepts of diagrammatic &

		graphical representation of data.
	CO-3	Understanding, applying &analyzing the concepts of central tendency & dispersion.
	CO-4	Understanding, applying, analyzing & evaluating the concepts of correlation & regression.
BAG315	**CO-1**	Understanding the importance of Indian and exotic breeds of livestock and poultry.
	CO-2	Understanding the management of different species of livestock and poultry.
	CO-3	Analyzing the prevention and control of important diseases of livestock and poultry.
BAG317	**CO-1**	Understanding the working, operation and uses of different farm machines
	CO-2	Understanding the various scientific principles for the efficient operation of farming activities
	CO-3	Applying the different farming machine-operational methods
	CO-5	Creating an appropriate method of farm machining that can give maximum crop productivity with minimum cost and human efforts.
TMUGE 314	**CO-1**	Understanding the correct use of English vocabulary.
	CO-2	Applying verbal and non verbal communication skills.
	CO-3	Understanding strategies of oral presentation.
	CO-4	Applying reading comprehension skills.
BAG 358	**CO-1**	Applying scientific methods of nursery preparation, transplanting and sowing of Kharif crops.
	CO-2	Applying the modern agricultural practices for maximizing the productivity of Kharif crops
BAG 359	**CO-1**	Applying the various methods and approaches of classical and modern plant breeding to strengthen the genetic level of crops.
	CO-2	Analyzing the data in resolving the various problems related to crop production
	CO-3	Evaluating the productiveness of different procedures used in plant breeding.
BAG 360	**CO-1**	Analysing the utilization, allocation of capital and performance of financial institution.
	CO-2	Estimating the credit requirement and appraisal of loan and preparation of financial and farm business project report.
	CO-3	Applying the statistical and ICT tools for data analysis.
BAG 362	**CO-1**	Understanding the identification of vegetables & spice crops and their seeds.
	CO-2	Applying the fertilizers and other agri-inputs in proper doses
	CO-3	Evaluating the economics of vegetables and spices cultivation.
BAG 364	**CO-1**	Applying & analyzing the concepts of diagrammatic & graphical representation of data.
	CO-2	Applying &analyzing the concepts of central tendency & dispersion.
	CO-3	Applying, analyzing & evaluating the concepts of correlation & regression.
BAG 365	**CO-1**	Identifying the body parts, and markers of good quality livestock

	CO-2	Describing animal housing and clean milk production
	CO-3	Applying the economics of farm animal production
BAG 368	**CO-1**	Applying the various methods in the field study
	CO-2	Analyzing the environmental condition based on visits of local areas-river, forest, rural, urban and industrial sites
	CO-3	Evaluating the impact of climate change on agriculture production, natural resources, economy and mitigation strategies
BAG 410	**CO-1**	Understanding and applying the cultivation practices of major cereals, pulses, oil seed, forage medicinal and aromatic rabi season crop
BAG 411	**CO-1**	Understanding the scope and importance of ornamental crops and their use in landscaping
	CO-2	Analyzing various production technologies of important medicinal, aromatic and ornamental crops.
	CO-3	Evaluating different packages of practices for loose flowers
BAG412	**CO-1**	Understanding markets, marketing functions, procedures and policies.
	CO-2	Recognizing efficient marketing channels for farmers for maximizing their economic gains
	CO-3	Explaining international trade and IPR in agriculture
BAG 413	**CO-1**	Understanding and applying the agricultural meteorology on weather forecast
	CO-2	Understanding the characteristic, behavior and phenomenon of the atmosphere.
	CO-3	Applying the tools of agro meteorology in agriculture.
BAG 414	**CO-1**	Understanding the types, scope and importance of farming system
	CO-2	Applying the cropping and farming system for sustainable agriculture.
	CO-3	Evaluating the efficiency of different cropping systems.
BAG415	**CO-1**	Understanding the relative importance of different sources of energy for agriculture sector and their sustainability.
	CO-2	Understanding various technological aspects of sustainable utilization of bio- and solar energy
	CO-3	Applying the above knowledge for evaluating the different sources of sustainable energy for agriculture sector.
BAG 416	**CO-1**	Understanding the soil forming processes and the current scenario of problematic soils in India and world
	CO-2	Applying remote sensing and GIS in identifying, diagnosing and management to reclaim problematic soils
	CO-3	Analyzing the irrigation water quality and use of saline water in agriculture
BAG 417	**CO-1**	Understanding the scope and importance of fruit and plantation crops industries in India
	CO-2	Demonstrating the effective production technologies for the cultivation of important fruit and plantation crops
	CO-3	Analyzing various production technologies for the cultivation of fruit and plantation crops
BAG 418	**CO-1**	Understanding the history, type and importance of seed and seed technology.
	CO-2	Understanding the duties and powers of seed inspector.

	CO-3	Explaining common pests, diseases and their management in seed storage.
	CO-4	Evaluating the characteristics of good quality seeds of cereals, pulses, fodder and vegetables.
BAG 419	**CO-1**	Understanding the significance of value inputs, distinguish between values and skills, the need, content and process of value education,
	CO-2	Understanding the meaning of Harmony in the Self the Co-existence of Self and Body, the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society
	CO-3	Exploring the meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society
	CO-4	Applying the harmonious relationship in nature and existence, and work out their mutually fulfilling participation in the nature.
TMUGE 414	**CO-1**	Understanding the correct use listening and speaking skills.
	CO-2	Applying job oriented skills.
	CO-3	Understanding strategies of oral presentation.
	CO-4	Applying professional writing skills.
BAG 455	**CO-1**	Identification of weeds in rabi season crops
	CO-2	Understanding and applying the sowing methods of wheat and sugarcane
	CO-3	Understanding and analysing yield contributing characters of rabi season crops and juice quality analysis of sugarcane
	CO-4	Applying the oil extraction of medicinal crops
BAG 456	**CO-1**	Understanding the propagation, scarification and stratification of seeds.
	CO-2	Applying the preparation of plant bio-regulators and their uses.
	CO-3	Analyzing the propagation methods for fruit and plantation crops.
BAG458	**CO-1**	Understanding the calculation of demand and supply and projection of producer surplus of agricultural commodities.
	CO-2	Understanding of identification of marketing channels and functions and projection of marketing cost, marketing margin, and price spread.
BAG 459	**CO-1**	Describing the shortwave and long wave radiation, and its estimation using Planck's intensity law.
	CO-2	Describing the wind speed and wind direction, sunshine duration, albedo and computation of radiation intensity using BSS.
	CO-3	Applying the tabulation and analysis of rain through open pan evaporation methods.
BAG 460	**CO-1**	Understanding various technological aspects of sustainable utilization of renewable energy.
	CO-2	Applying the above knowledge for evaluating the different sources of sustainable energy for agriculture sector
BAG 462	**CO-1**	Applying the seed production techniques in major cereal, pulses, oil seed and vegetable crops
	CO-2	Analyzing the seed sampling and seed testing tools for measuring the physical purity, germination, vigour and viability of seeds.
	CO-3	Evaluating the certification and genetic purity of seeds

BAGE 401	**CO-1**	Understanding the importance of agribusiness in Indian economy and in new agricultural policy.
	CO-2	Understanding the procedure of setting up new agro based industries
	CO-3	Understanding the management functions and carrying out SWOT analysis of any business environment.
BAGE 402	**CO-1**	Understanding the basics of different agrochemicals
	CO-2	Application of various methods and techniques of different agrochemicals
	CO-4	Analyzing various methodologies and techniques used for the development of ecological agriculture
BAGE 403	**CO-1**	Understanding basic concepts, theories and principles of plant breeding for improving yield and other traits in crops.
	CO-2	Applying various methods and approaches of traditional and advanced plant breeding to enhance the crop yield.
	CO-3	Analyzing various procedures, techniques and strategies for quality seed production to ensure the food security.
	CO-4	Evaluating different methodologies and procedures used to intensify the crop productivity.
BAGE 404	**CO-1**	Understanding the basic concepts and principles of landscaping
	CO-2	Understanding and analyzing the beneficial trees, climbers and creepers used in different landscapes
	CO-3	Analyzing the propagation, planting, and canopy management in horticulture crops
BAGE 451	**CO-1**	Understanding of Agri – inputs outputs market financial institutions.
	CO-2	Understanding of preparation, analysis and writing of project
BAGE 452	**CO-1**	Studying the various methods of pesticides application
	CO-2	Applying various fertilizers to improve soil fertility.
BAGE 453	**CO-1**	Understanding the selfing and crossing techniques in self and cross pollinated species,
	CO-2	Understanding and applying the tools and techniques for hybrid seed production
	CO-3	Analysing the role of pollinators in hybrid seed production
BAGE 454	**CO-1**	Understanding the tools for identification of trees, annuals, pot plants and shrubs in different landscapes.
	CO-2	Preparing and applying the layout of formal and informal garden.
BAG 509	**CO-1**	Understanding the various categories of insect pest and diseases.
	CO-2	Explaining the application of integrated pest and disease management
	CO-3	Applying the tools of integrated pest and disease management: cultural, mechanical, physical, biological, legislative and chemical control.
	CO-4	Evaluating insect pest and diseases through survey surveillance and forecasting
BAG 510	**CO-1**	Understanding the types and importance of organic and inorganic fertilizers
	CO-2	Understanding the mechanism of nutrient transport and uptake in soil and in plant
	CO-3	Analyzing the doses of micro and macronutrients in various fertilizers.
BAG 511	**CO-1**	Understanding the classification of different arthropods pests and importance of beneficial insects.

	CO-2	Identifying the different insect pest of field and stored grains
	CO-3	Applying various procedures and approaches for insect-pests management.
BAG 512	**CO-1**	Understanding of the symptoms, etiology, disease cycle and management of major diseases of field and horticultural crop
	CO-2	Demonstrating the analysis and management of diseased field
BAG 513	**CO-1**	Understanding the importance of wild relatives for producing new varieties of Kharif crop
	CO-2	Understanding the floral biology, breeding behaviour, hybridization and population handling methods applied to different Kharif crops
	CO-3	Analyzing the potential of various hybridization methods and techniques in different crops.
BAG 514	**CO-1**	Understanding the concepts and government policies for entrepreneurship development.
	CO-2	Explaining the business development and managerial skill.
	CO-3	Applying themanagement techniques in production and marketing management.
	CO-4	Analyzing the financial feasibility of Agricultural Projects.
BAG 515	**CO-1**	Understanding the basic concepts, tools and techniques of remote sensing and geoinformatics.
	CO-2	Demonstrating use of nanotechnology for scaling up farm productivity.
	CO-3	Analyzing crop simulation models and their uses for optimization of agricultural inputs.
	CO-4	Evaluating the role of geoinformatics in precision agriculture.
BAG 516	**CO-1**	Understanding the history, concept and role of national and international IPRs regulatory bodies
	CO-2	Recognizing the history of UPOV for protection of plant varieties in India.
	CO-3	Applyingthe Plant Breeder's Rights for registration of plant varieties under PPV&FRs act.
	CO-4	Analyzing Indian Biological Diversity Acts and their salient features with work plan.
BAG 555	**CO-1**	Understanding various methods of diagnosis and detection of various insect pests, and plant diseases
	CO-2	Applying the methods of mass multiplication and production of Trichoderma, Pseudomonas, Trichogramma, NPV etc. in laboratory for plant protection
	CO-3	Applying the preventive strategies and IPM module for management of insect pests and diseases in field
BAG 556	**CO-1**	Understanding the role of nitrogen, phosphorus and potassium in plant health and productivity
	CO-2	Applying bio fertilizers in different crops
	CO-3	Evaluating the availability of nutrients in soil and fertilizers
BAG 557	**CO-1**	Applying various procedures of pest management in field crops and stored grains.
	CO-2	Applying various methods of managing the beneficial insects
BAG 558	**CO-1**	Diagnosing the occurrence of various diseases in field

	CO-2	Applying the management practices for different disease of agricultural crops.
BAG 559	**CO 1**	Remembering the basic floral structure of various kharif crops
	CO2	Understanding the basic floral biology, breeding behaviour, various emasculation and hybridization techniques applied to kharif crops.
	CO 3	Evaluation various concepts and methods of crop Improvement based on their application in field.
BAG 560	**CO-1**	Understanding the business development ideas and management skills.
	CO-2	Preparing the business plan and proposal for entrepreneurship development
BAG 561	**CO-1**	Understanding the working and uses of different advance scanning methods of crop data collection using satellite and precise computer software.
	CO-2	Applying the knowledge of data classification of crop field according to its characteristics.
	CO-3	Evaluating the real time crop pattern by utilizing latest available scanning techniques and softwares.
	CO-4	Creating appropriate methods for precise prediction of crop productivity
BAG 562	**CO-1**	Understanding and applying crop planning and raising field crops in multiple cropping systems
	CO-2	Understanding the seed production, mechanization, resource conservation, integrated nutrient, insect-pest and disease management technologies.
	CO-3	Applying field preparation, seed treatment, nursery raising, sowing, weeding, irrigation and management of insect-pests diseases of crops.
	CO-4	Evaluating the methods of harvesting, threshing, drying, winnowing, storage and marketing of produce.
	CO-5	Preparing the balance sheet including cost of cultivation and net returns.
TMUGS 501	**CO-1**	Utilizing effective verbal and non-verbal communication techniques in formal and informal settings
	CO-2	Understanding and analyzing self and devising a strategy for self growth and development.
	CO-3	Adapting a positive mindset conducive for growth through optimism and constructive thinking.
	CO-4	Utilizing time in the most effective manner and avoiding procrastination.
	CO-5	Making appropriate and responsible decisions through various techniques like SWOT, Simulation and Decision Tree.
	CO-6	Formulating strategies of avoiding time wasters and preparing to-do list to manage priorities and achieve SMART goals.
BAGE 501	**CO-1**	Understanding the basic concepts of food safety management.
	CO-2	Applying effective storage and hygienic methods to control the contamination.
BAGE 502	**CO-1**	Understanding the basics of bio-pesticide and bio-fertilizers.
	CO-2	Explaining the application of mass production technology of bio-pesticides.
	CO-3	Describing the quality control and marketing of bio-fertilizers.

BAGE 503	**CO-1**	Understanding importance and scope of protected cultivation.
	CO-2	Understanding greenhouse technology and its application in cultivation of important horticultural crops
	CO-3	Analyzing the propagation and production of quality planting material of horticultural crops.
BAGE 504	**CO-1**	Understanding the concepts and principles of micropropagation
	CO-2	Recognizing the different pathways of plant regeneration under in vitro conditions
	CO-3	Applying various micro propagation methods to conserve germplasm and vitro, production of secondary metabolites.
BAGE 551	**CO-1**	Understanding the various methods and techniques for the microbial and chemical assessment of fresh / processed food
	CO-2	Applying different methodologies and regulation for implementing HACCP, FSMS to ensure food safety
BAGE 552	**CO-1**	Understanding the Isolation , purification of important agents of biopesticides and biofertilizers
	CO-2	Applying the mass multiplication and inoculums production of biofertilizers
BAGE 553	**CO-1**	Understanding the use of protrays in quality planting material production.
	CO-2	Applying the bed preparation and planting of crop.
	CO-3	Analyzing the methods of raising of seedlings and saplings under protected conditions.
BAGE 554	**CO-1**	Applying the approaches of biotechnology in micro-propagation
	CO-2	Analyzing the different sterilization techniques in plant tissue culture
	CO-3	Evaluating the optimum nutrient composition required for growth of explant
BAG 607	**CO-1**	Understanding the history and prospects of rainfed agriculture and watershed in India
	CO-2	Explaining the water harvesting technique to mitigate drought.
BAG 608	**CO-1**	Understanding the concepts of green house.
	CO-2	Application of effective materials and equipments used in green house.
	CO-3	Analyzing the cost estimation and economic analysis of green house.
	CO-4	Evaluating the different methodologies and technologies adopted for green house.
BAG 609	**CO-1**	Understanding of the symptoms, etiology, disease cycle and management of major diseases of field and horticultural crops
	CO-2	Analyzing the diseased field and their management practices
BAG 610	**CO-1**	Understanding the importance of pre and post-harvest processing and factors affecting the productivity of horticultural crops
	CO-2	Explaining the principles, concept and methods of preservation.
	CO-3	Applying various methods and principles of post harvesting and field handling.
BAG 611	**CO-1**	Understanding the basic floral biology, breeding behaviour, various hybridization and population handling methods applied to different Rabi crops
	CO-2	Applying the wild relative to produce new varieties of Rabi crops

	CO-3	Analyzing the potential of various hybridization methods and techniques in different crops.
	CO-4	Evaluation of the overall understanding of the concepts and methods based on their application in field.
BAG 612	**CO-1**	Understanding the various principles of farm management
	CO-2	Discussing maintenance of farm records and accounts
	CO-3	Explaining natural resource economics and their optimal use.
BAG 614	**CO-1**	Understanding the principles of food science and nutrition.
	CO-2	Applying effective methods and practices for nutritional management.
	CO-3	Analyzing various procedures, methods and techniques for microbial and chemical assessment of fresh and processed foods.
	CO-4	Evaluating the different methodologies and technologies adopted for food processing and preservation to ensure national food security.
BAG 615	**CO-1**	Describing the principles and scope of organic farming
	CO-2	Applying fundamentals of plant protection measures under organic mode of production.
	CO-3	Evaluating the measures of organic farming, marketing process and export potential of organic products.
BAG 616	**CO-1**	Understanding the importance of beneficial insects for human society
	CO-2	Understanding the tools and techniques for beekeeping ,silk and lac production
	CO-3	Applying various predators and parasitoids in managing the insect pests of various crops
BAG 657	**CO-1**	Understanding the meteorological tools for different areas of country.
	CO-2	Applying and the cropping pattern of different rainfed areas of the country.
BAG 658	**CO-1**	Understanding the different type of green houses based on shape
	CO-2	Applying the concept of rate of air exchange in an active summer winter cooling system.
	CO-3	Analyzing the moisture content of various grains by oven drying & infrared moisture methods.
BAG 659	**CO-1**	Understanding the importance of field visits and herbarium
	CO-2	Identifying and diagnosing the diseases in field crops
	CO-3	Applying management practices on diseased field.
BAG 660	**CO-1**	Understanding the different types of packaging for shelf life extension.
	CO-2	Applying the methods for preventing chilling and freezing injury in vegetables and fruits.
	CO-3	Evaluating the quality of horticultural products.
BAG 661	**CO-1**	Remembering basic floral structure, parts, floral diagram and floral formula of various rabi crops
	CO-2	Understanding the basic floral biology, breeding behaviour, emasculation and hybridization techniques applied to different rabi crops.
	CO-3	Evaluation of the concepts and methods based on their application in field.

BAG 662	**CO-1**	Understanding the farm lay out, cost and depreciation in farm management.
	CO-2	Preparing the farm plan, budget, record and accounting
BAG 663	**CO-1**	Understanding the crop planning and raising field crops in multiple cropping systems
	CO-2	Understanding the seed production, mechanization, resource conservation, integrated nutrient, insect-pest and disease management technologies.
	CO-3	Applying and evaluating the harvesting, threshing, drying, winnowing, storage and marketing of produce.
	CO-4	Preparing the balance sheet including cost of cultivation and net returns
BAG 665	**CO-1**	Demonstrating the process of composting, vermicomposting and their quality parameters.
	CO-3	Evaluating various components of organic production processes
BAG 666	**CO-1**	Understanding the different species of honey bee, Silk worm and Lac insect.
	CO-2	Applying the beekeeping, sericulture and lac culture
	CO-3	Identifying and applying the techniques for mass multiplication of predators and parasitoids
	CO-4	Analyzing the impacts of beneficial insects.
TMUGS-601	**CO-1**	Communicating effectively in a variety of public and interpersonal settings.
	CO-1	Applying concepts of change management for growth and development by understanding inertia of change and mastering the Laws of Change.
	CO-3	Analyzing scenarios, synthesizing alternatives and thinking critically to negotiate, resolve conflicts and develop cordial interpersonal relationships.
	CO-4	Functioning in a team and enabling other people to act while encouraging growth and creating mutual respect and trust.
	CO-5	Handling difficult situations with grace, style, and professionalism.
BAGE 601	**CO-1**	Understanding the importance of Hi-tech Horticulture and protected cultivation.
	CO-2	Describing the Differential Geo-positioning System (DGPS). .
	CO-3	Applying the high density orcharding, precision farming and micro propagation in horticultural crops
BAGE 602	**CO-1**	Understanding the principles of weed management
	CO-2	Applying different tools and techniques for weed management.
BAGE 603	**CO-1**	Understanding the system approach for representing soil-plant-atmospheric continuum
	CO-2	Demonstrating the crop responses to weather elements for crop growth and development
	CO-3	Analyzing thetools & techniques for weather forecasting and ITK
	CO-4	Creating agro-advisory bulletin based on weather forecast.
BAGE 604	**CO-1**	Understanding the agriculture journalism, newspaper and magazine as communication media.
	CO-2	Demonstrating the writing of agriculture stories using photographs and artwork.

BAGE 651	**CO-1**	Understanding the types of polyhouses and shade net houses.
	CO-2	Applying the tools and equipments of intercultural operations.
	CO-3	Applying the concepts of canopy management in horticultural crops.
BAGE 652	**CO-1**	Understanding the scheme of weed identification
	CO-2	Applying the techniques of weed eradication.
	CO-3	Analyzing the yield losses due to weeds.
BAGE 653	**CO-1**	Developing skills for using the computer software for the preparation of crop growth models and agro-advisory bulletin
	CO-2	Creating knowledge of weather forecast for preplanning of agricultural practices
BAGE 654	**CO-1**	Understanding and writing agricultural stories
	CO-2	Applying practices of interviewing and covering agricultural events
	CO-3	Applying the artwork for developing the agricultural story
BAG-754	**CO-1**	Understanding the functioning of various industries of agriculture sector
	CO-2	Describing the different aspects of agriculture in association of farmers and allied agencies
	CO-3	Analyzing the opportunities and challenges of agricultural industry
	CO-4	Identifying the problems in field due to prevalent agricultural practices
	CO-5	Evaluating the impact of plant diseases and pests on agricultural productivity and the efficacy of prevalent measures of management
BAG 852	**CO-1**	Understanding the basic principles and techniques of applied agricultural microbiology
	CO-2	Analyzing the effect of various microbial formulations on crop productivity and ecological benefits
	CO-3	Developing novel microbial formulations and demonstrating their potential at farmers' fields
	CO-4	Evaluating the potential of microbes in laboratory, green house and field
	CO-5	Evaluating the different methods of microbial formulations, storage and application in fields
BAG 854	**CO-1**	Understanding the principles and methods of mushroom cultivation
	CO-2	Demonstrating the production technology of oyster and button mushroom
	CO-3	Developing entrepreneurship in mushroom cultivation
BAG- 858	**CO-1**	Understanding the importance of commercial horticulture and protected cultivation
	CO-2	Applying the propagation and various sowing methods
	CO-3	Applying and analyzing the food safety methods
BAG-860	**CO-1**	Understanding the concepts, principles and techniques of food processing
	CO-2	Explaining the concept of successful entrepreneur in the field of food processing.
	CO-3	Applying principles and various food processing technique to develop product from a variety of food crops and utilization of waste food byproduct to prepare value added product