

List Elective Course in B.Sc Agriculture (Hons.) during the 2023-24

Program code	Program Name	Course code	Elective Course Name	Year of introduction
209	B.Sc Ag (Hons)	548012	Agri business Management	2023-24
		548013	Agrochemicals	2023-24
		548014	Commercial Plant Breeding	2023-24
		548015	Landscaping	2023-24
		548016	Food Safety and Standards	2023-24
		548017	Biopesticides & Biofertilizers	2023-24
		648009	Protected Cultivation	2023-24
		648010	Hi-tech. Horticulture	2023-24
		648011	Weed Management	2023-24
		648012	System Simulation and Agro-advisory	2023-24
		648013	Agricultural Journalism	2023-24
		648014	Composition cum Duck/(and)Quail/(and)Rabbit culture.	2023-24
		848001	Production Technology for Bioagents and Biofertilizer (ELP)	2023-24
		848002	Seed Production and Technology (ELP)	2023-24
		848003	Mushroom Cultivation Technology (ELP)	2023-24
		848004	Soil, Plant, Water and Seed Testing (ELP)	2023-24
		848005	Commercial Beekeeping (ELP)	2023-24
		848006	Poultry Production Technology (ELP)	2023-24
		848007	Commercial Horticulture (ELP)	2023-24
		848008	Floriculture and Landscaping (ELP)	2023-24
		848009	Food Processing (ELP)	2023-24
		848010	Agriculture Waste Management (ELP)	2023-24
		848011	Organic Production Technology (ELP)	2023-24
		848012	Commercial Sericulture (ELP)	2023-24

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ELECTIVE COURSES

1. Agri-business Management

3(2+1) AGE-51

Theory

Transformation of agriculture into agribusiness, various stakeholders and components of agribusiness systems. Importance of agribusiness in the Indian economy and New Agricultural Policy. Distinctive features of Agribusiness Management: Importance and needs of agro-based industries, Classification of industries and types of agro based industries. Institutional arrangement. procedures to set up agro based industries. Constraints in establishing agro-based industries. Agri-value chain: Understanding primary and support activities and their linkages. Business environment: PEST & SWOT analysis. Management functions: Roles & activities, Organization culture. Planning, meaning, definition, types of plans. Purpose or mission, goals or objectives, Strategies, policies procedures, rules, programs and budget. Components of a business plan. Steps in planning and implementation. Organization staffing, directing and motivation. Ordering, leading, supervision, communications. control. Capital Management and Financial management of Agribusiness. Financial statements and their importance. Marketing Management: Segmentation, targeting & positioning. Marketing mix and marketing strategies. Consumer behavior analysis, Product Life Cycle (PLC). Sales & Distribution Management. Pricing policy, various pricing methods. Project Management definition, project cycle, identification, formulation, appraisal, implementation, monitoring and evaluation. Project Appraisal and evaluation techniques.

Practical

Study of agri-input markets: Seed, fertilizers, pesticides. Study of output markets: grains. fruits, vegetables, flowers. Study of product markets. retails trade commodity trading, and value added products. Study of financing institutions- Cooperative, Commercial banks, RRBs, Agribusiness Finance Limited, NABARD. Preparations of projects and Feasibility reports for agribusiness entrepreneur. Appraisal/evaluation techniques of identifying viable project- Non-discounting techniques. Case study of agro-based industries. Trend and growth rate of prices of agricultural commodities. Net present worth technique for selection of viable project. Internal rate of return.

2. Agrochemicals

3(2+1) AGE-52

Theory

An introduction to agrochemicals, their type and role in agriculture, effect on environment, soil, human and animal health. merits and demerits of their uses in agriculture.

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management of agrochemicals for sustainable agriculture. Herbicides-Major classes, properties and important herbicides. Fate of herbicides. Fungicides-Classification-Inorganic fungicides-characteristics, preparation and use of sulfur and copper, Mode of action-Bordeaux mixture and copper oxychloride. Organic fungicides- Mode of action- Dithiocarbamates-characteristics, preparation and use of Zineb and maneb.

Systemic fungicides- Benomyl, carboxin, oxycarboxin, Metalaxyl, Carbendazim. characteristics and use. Introduction and classification of insecticides: inorganic and organic insecticides Organochlorine, Organophosphates, Carbamates, Synthetic pyrethroids Neonicotinoids. Hiorationals. Insecticide Act and rules, Insecticides banned, withdrawn and restricted use, Fate of insecticides in soil & plant. IGRs Biopesticides, Reduced risk insecticides, Botanicals, plant and animal systemic insecticides their characteristics and uses. Fertilizers and their importance. Nitrogenous fertilizers: Feed stocks and Manufacturing of ammonium sulphate, ammonium nitrate, ammonium chloride, urea. Slow release N- fertilizers. Phosphatic fertilizers: feedstock and manufacturing of single superphosphate. Preparation of bone meal and basic slag. Potassic fertilizers: Natural sources of potash, manufacturing of potassium chloride, potassium sulphate and potassium nitrate. Mixed and complex fertilizers: Sources and compatibility-preparation of major, secondary and micronutrient mixtures. Complex fertilizers: Manufacturing of ammonium phosphates, nitrophosphates and NPK complexes. Fertilizer control order. Fertilizer logistics and marketing. Plant bio-pesticides for ecological agriculture, Bio-insect repellent.

Practical

Sampling of fertilizers and pesticides. Pesticides application technology to study about various pesticides appliances. Quick tests for identification of common fertilizers. Identification of anion and cation in fertilizer. Calculation of doses of insecticides to be used. To study and identify various formulations of insecticide available in market Estimation of nitrogen in Urea. Estimation of water soluble P_2O_5 and citrate soluble P_2O_5 in single super phosphate. Estimation of potassium in-Murait of Potash/ Sulphate of Potash by flame photometer. Determination of copper content in copper oxychloride. Determination of sulphur content in sulphur fungicide. Determination of thiram. Determination of ziram content.

3. Commercial Plant Breeding

3(1+2) AGE-53

Theory

Types of crops and modes of plant reproduction. Line development and maintenance breeding in self and cross pollinated crops (A/B/R and two line system) for development of hybrids and seed production. Genetic purity test of commercial hybrids. Advances in hybrid

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seed production of maize, rice, sorghum, pearl millet, castor, sunflower. cotton pigeon pea. Brassica etc. Quality seed production of vegetable crops under open and protected environment. Alternative strategies for the development of the line and cultivars: haploid inducer, tissue culture techniques and biotechnological tools. IPR issues in commercial plant breeding: DUS testing and registration of varieties under PPV & FR Act. Variety testing, release and notification systems in India Principles and techniques of seed production, types of seeds, quality testing in self and cross pollinated crops.

Practical

Floral biology in self and cross pollinated species, selfing and crossing techniques. Techniques of seed production in self and cross pollinated crops using A/B/R and two line system. Learning techniques in hybrid seed production using male-sterility in field crops. Understanding the difficulties in hybrid seed production, Tools and techniques For optimizing hybrid seed production. Concept of rouging in seed production plot. Concept of line its multiplication and purification in hybrid seed production. Role of pollinators in hybrid seed production. Hybrid seed production techniques in sorghum, pearl millet, maize, rice, rapeseed-mustard, sunflower, castor, pigeon pea, cotton and vegetable crops. Sampling and analytical procedures for purity testing and detection of spurious seed. Seed drying and storage structure in quality seed management. Screening techniques during seed processing viz., grading and packaging. Visit to public private seed production and processing plants.

4. Landscaping

3(2+1) AGE-54

Theory

Importance and scope of landscaping. Principles of landscaping, garden styles and types. terrace gardening, vertical gardening. garden components, adornments, lawn making. rockery. water garden. walk-paths, bridges, other constructed features etc. gardens for special purposes. Trees: selection. propagation. planting schemes, canopy management, shrubs and herbaceous perennials: selection. propagation, planting schemes, architecture. Climber and creepers: importance, selection, propagation, planting, Annuals: selection, propagation, planting scheme. Other garden plants: palms, ferns, grasses and cacti succulents. Pot plants: selection. arrangement, management. Bio-aesthetic planning: definition. need, planning: landscaping of urban and rural areas, Peri-urban landscaping, Landscaping of schools, public places like bus station, railway station, townships, river banks, hospitals, play grounds, airports. industries, institutions. Bonsai: principles and management, lawn: establishment and maintenance. CAD application.

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Practical

Identification of trees, shrubs, annuals, pot plants; Propagation of trees, shrubs and annuals, care and maintenance of plants. potting and repotting, identification of tools and implements used in landscape design, training and pruning of plants for special effects, lawn establishment and maintenance, layout of formal gardens, informal gardens, special type of gardens (sunken garden, terrace garden, rock garden) and designing of conservatory and lathe house. Use of computer software, visit to important gardens/ parks/ institutes.

5. Food Safety and Standards

3(2+1) AGE-55

Theory

Food Safety - Definition. Importance, Scope and Factors affecting Food Safety. Hazards and Risks, Types of hazards - Biological, Chemical, Physical hazards. Management of hazards - Need. Control of parameters. Temperature control. Food storage. Product design. Hygiene and Sanitation in Food Service Establishments- Introduction. Sources of contamination and their control. Waste Disposal. Pest and Rodent Control. Personnel Hygiene. Food Safety Measures. Food Safety Management Tools- Basic concepts. PRPs, OMPs, SSOPs etc. HACCP. ISO series. TQM - concept and need for quality. components of TOM. Kaizen. Risk Analysis. Accreditation and Auditing. Water Analysis, Surface Sanitation and Personal Hygiene. Food laws and Standards-Indian Food Regulatory Regime, FSSAI. Global Scenario CAC. Other laws and standards related to food. Recent concerns- New and Emerging Pathogens. Packaging, Product labeling and Nutritional labeling. Genetically modified foods\ transgenics. Organic foods. Newer approaches to food safety. Recent Outbreaks. Indian and International Standards for food products.

Practical

Water quality analysis physico-chemical and microbiological. Preparation of different types of media. Microbiological Examination of different food samples. Assessment of surface sanitation by swab/rinse method. Assessment of personal hygiene. Biochemical tests for identification of bacteria. Scheme for the detection of food borne pathogens. Preparation of plans for implementation of FSMS - HACCP, ISO: 22000.

6. Course title: Biopesticides & Biofertilizers

3(2+1) AGE-56

Theory

History and concept of biopesticides. Importance. scope and potential of biopesticide. Definitions, concepts and classification of biopesticides viz. pathogen, botanical pesticides, and

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biorationales. Botanicals and their uses. Mass production technology of bio-pesticides. Virulence, pathogenicity and symptoms of entomopathogenic pathogens and nematodes. Methods of application of biopesticides. Methods of quality control and Techniques of biopesticides. Impediments and limitation in production and use of biopesticide. Biofertilizers - Introduction. status and scope. Structure and characteristic features of bacterial biofertilizers- Azospirillum, Azotobacter, Pseudomonas. Rhizobium and Frankia; Cyanobacterial biofertilizers- Anabaena. Nostoc, Hapalosiphon and fungal biofertilizers- AM mycorrhiza and ectomycorrhiza. Nitrogen fixation -Free living and symbiotic nitrogen fixation. Mechanism of phosphate solubilization and phosphate mobilization, K solubilization. Production technology: Strain selection, sterilization, growth and fermentation, mass production of carrier based and liquid biofertilizers. FCC) specifications and quality control of biofertilizers. Application technology for seeds, seedlings, tubers, sets etc. Biofertilizers -Storage, shelf life, quality control and marketing. Factors influencing the efficacy of biofertilizers.

Practical

Isolation and purification of important biopesticides: Trichoderma Pseudomonas, Bacillus, Metarhizium etc. and its production. Identification of important botanicals. Visit to biopesticide laboratory in nearby area. Field visit to explore naturally infected cadavers. Identification of entomopathogenic entities in field condition. Quality control of biopesticides. Isolation and purification of Azospirillum, Azotobacter, Rhizobium. P-solubilizers and cyanobacteria. Mass multiplication and inoculum production of biofertilizers. Isolation of AM fungi -Wet sieving method and sucrose gradient method. Mass production of AM inoculants.

7. Protected Cultivation

3(2+1) AGE-61

Theory

Protected cultivation- importance and scope, Status of protected cultivation in India and World types of protected structure based on site and climate. Cladding material involved in greenhouse/ poly house. Greenhouse design, environment control, artificial lights, Automation. Soil preparation and management. Substrate management. Types of benches and containers. Irrigation and fertigation management. Propagation and production of quality planting material of horticultural crops. Greenhouse cultivation of important horticultural crops - rose, carnation, chrysanthemum, gerbera, orchid, anthurium, lily, tulip, tomato, bell pepper, cucumber, strawberry, pot plants, etc. Cultivation of economically important medicinal and aromatic plants. Offseason production of flowers and vegetables. Insect pest and disease management.

Practical

Raising of seedlings and saplings under protected conditions, use of protrays in quality planting material production, Bed preparation and planting of crop for production, Inter cultural operations. Soil EC and pH measurement, Regulation of irrigation and fertilizers through drip, fogging and misting.

8. Hi-tech. Horticulture

3(2+1) AGE-62

Theory

Introduction & importance; Nursery management and mechanization; micro propagation of horticultural crops; Modern field preparation and planting methods. Protected cultivation: advantages, controlled conditions, method and techniques, Micro irrigation systems and its components; EC. pH based fertilizer scheduling, canopy management, high density orcharding. Components of precision farming: Remote sensing. Geographical Information System (GIS), Differential Geo-positioning System (DGPS), Variable Rate applicator (VRA), application of precision farming in horticultural crops (fruits, vegetables and ornamental crops); mechanized harvesting of produce. Practical Types of polyhouses and shade

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net houses, Intercultural operations, tools and equipments identification and application, Micro propagation, Nursery-protrays, micro-irrigation. EC, pH based fertilizer scheduling, canopy management, visit to hi-tech orchard/nursery.

9. Weed Management

3(2+1) AGE-63

Theory

Introduction to weeds, characteristics of weeds their harmful and beneficial effects on ecosystem. Classification, reproduction and dissemination of weeds. Herbicide classification. concept of adjuvant, surfactant, herbicide formulation and their use. Introduction to mode of action of herbicides and selectivity. Allelopathy and its application for weed management. Bio-herbicides and their application in agriculture. Concept of herbicide mixture and utility in agriculture. Herbicide compatibility with agro-chemicals and their application. Integration of herbicides with non chemical methods of weed management. Herbicide Resistance and its management.

Practical

Techniques of weed preservation. Weed identification and their losses study. Biology of important weeds. Study of herbicide formulations and mixture of herbicide. Herbicide and agro- chemicals study. Shift of weed flora study in long term experiments. Study of methods of herbicide application, spraying equipments. Calculations of herbicide doses and weed control efficiency and weed index.

10. System Simulation and Agro advisory

3(2+1) AGE-64

Theory

System Approach for representing soil-plant-atmospheric continuum, system boundaries, Crop models, concepts & techniques, types of crop models, data requirements. relational diagrams.

Evaluation of crop responses to weather elements; Elementary crop growth models; calibration, validation, verification and sensitivity analysis. Potential and achievable crop production- concept and modelling techniques for their estimation. Crop production in moisture and nutrients limited conditions; components of soil water and nutrients balance. Weather forecasting, types, methods, tools & techniques, forecast verification: Value added weather forecast, ITK for weather forecast and its validity; Crop-Weather Calendars; Preparation of agro-advisory bulletin based on weather forecast. Use of crop simulation model for preparation of Agro-advisory and its effective dissemination.

Practical

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Preparation of crop weather calendars. Preparation of agro-advisories based on weather forecast using various approaches and synoptic charts. Working with statistical and simulation models for crop growth. Potential & achievable production: yield forecasting, insect & disease forecasting models. Simulation with limitations of water and nutrient management options. Sensitivity analysis of varying weather and crop management practices. Use of statistical approaches in data analysis and preparation of historical, past and present meteorological data for medium range weather forecast. Feedback from farmers about the agro advisory.

11. Agricultural Journalism

3(2+1) AGE-65

Theory

Agricultural Journalism: The nature and scope of agricultural journalism characteristics and training of the agricultural journalist, how agricultural journalism is similar to and different from other types of journalism. Newspapers and magazines as communication media: Characteristics; kinds and functions of newspapers and magazines, characteristics of newspaper and magazine readers. Form and content of newspapers and magazines: Style and language of newspapers and magazines. parts of newspapers and magazines. The agricultural story: Types of agricultural stories, subject matter of the agricultural story. structure of the agricultural story. Gathering agricultural information: Sources of agricultural information, interviews, coverage of events, abstracting from research and scientific materials, wire services, other agricultural news sources. Writing the story: Organizing the material, treatment of the story. writing the news lead and the body, readability measures. Illustrating agricultural stories: Use of photographs, use of artwork (graphs, charts, maps, etc.), writing the captions. Editorial mechanics: Copy reading, headline and title writing, proofreading, lay outting.

Practical

Practice in interviewing. Covering agricultural events. Abstracting stories from research and scientific materials and from wire services. Writing different types of agricultural stories. Selecting pictures and artwork for the agricultural story. Practice in editing, copy reading, headline and title writing, proofreading, layouting. Testing copy with a readability formula. Visit to a publishing office.

12. Composition cum Duck/ (and) Quail/ (and) Rabbit culture

3(2+1) AGE-66

Fishery:

Definition, common characteristics and position of fish in Animal Kingdom, fishery statistics preparation and management of fish pond, physical and chemical condition of water for fishery, feeds and feeding of fishes, breeding of fish, diseases and enemies of fishes, use of Duck/quality beats on fish feeds.

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Duckry:

Definition, common features and advantages, breeds, incubation and hatching feeding of ducks, care and managements of ducking, grower, layer/broiler ducks. Characteristics of duck eggs, common diseases and vaccination schedule, duckry statistics. Quail: Definition, common features of quail farming, advantages, breeds, incubation and hatching, feeding of quails. care and managements of quail chick, grower/layer/broilers. Quail product technology, common diseases and vaccination schedule.

Rabbitry:

Introduction, scope and advantages of rabbit farming, breeds, breeding, housing, care and management of young and adult rabbit. feeds and feeding for rabbits, common problems of rabbitry including vaccination schedule, fur and meat production technology.

1. Fishery units, visit, Demonstration and report formulation.
2. Different type of fishes, deep water, middle water, and surface water.
3. Evaluation of Duck Egg (candling) and Grading.
4. Vaccination schedule for duck and Quail.
5. Preparation Ration for Duck, Quail. Rabbit and Fish.
6. Preparation of different products from eggs.

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DEPARTMENT OF MICROBIOLOGY (SFS COURSE)
M.Sc. MICROBIOLOGY

S.N.	Name of the course		Internal (M.M.)	External(M.M.)
FIRST SEMESTER				
1	AM 101	Instrumentation and Microbial Techniques	50	50
2	AM 102	Microbial Diversity- Prokaryotes and Viruses	50	50
3	AM 103	Microbial Diversity Eukaryotes	50	50
4	AM 104	Biostatistics, Computer Applications and Bioinformatics	50	50
5	AM 105	Practical		100
SECOND SEMESTER				
6	AM 201	Microbial Physiology and Biochemistry	50	50
7	AM 202	Microbial Genetics, Molecular Biology and Genetic Engineering	50	50
8	AM 203	Agricultural Microbiology	50	50
9	AM 204	Microbial Environmental Technology	50	50
10	AM 205	Practical		100
THIRD SEMESTER				
11	AM 301	Medical Microbiology	50	50
12	AM 302	Molecular and Clinical Microbiology	50	50
13	AM 303	Food and Dairy Microbiology	50	50
14	AM 304	Industrial Microbiology	50	50
15	AM 305	Practical		100
16	AM 401	FOURTH SEMESTER	400	
17	AM 402	Project Report including Viva-voce		
18	AM 403	Medical Microbiology Any		
19	AM 404	Industrial Microbiology one		
20	AM 405	Agricultural Microbiology of } Any One Of 4 Environmental Microbiology		
		Total Marks\	2000	

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Practical Based on course Medical Microbiology

1. To prepare various basic, selective, enrichment and enriched media used for isolation of medically important bacteria from clinical samples.
2. To perform various biochemical tests (IMVIC, oxidase, catalase, urea utilization test, sugar utilization and H₂S production on TSI agar slant) used for identification of medically important bacteria.
3. To perform sugar fermentation tests for identification of medically important bacteria.
4. Demonstration normal microbial flora of skin, mouth and throat.
5. Isolation and identification of Staphylococcal species using suitable media, staining techniques and biochemical tests.
6. Isolation and identification of Streptococcal species using suitable media, staining techniques and biochemical tests.
7. Isolation and identification of enteric fever causing bacteria (*Salmonella typhi*) using suitable media and biochemical tests.
8. Microbiological analysis of urine specimens.
9. Microbiological analysis of stool specimens.
10. Microbiological analysis of blood specimens.
11. Microbiological analysis of sputum specimens
12. To determine antibiotic sensitivity for Gram negative and Gram positive bacteria by disc diffusion method
13. To determine Minimal Inhibitory Concentration (MIC) and Minimal Bactericidal concentration of an antibiotic for test bacteria.
14. To evaluate antimicrobial chemical agents by log reduction method.

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Course 14, Code AM 304: Industrial Microbiology

Unit I (a): Sources and characters of industrial microbes, their isolation, purification and maintenance. Screening of useful strains: primary screening and secondary screening. Strain improvement through random mutation (random and rational selection), genetic recombination and genetic engineering.

Unit I (b): Fermentation technology: microbial growth kinetics in batch, continuous and fed-batch fermentation process. Stirred aerobic bioreactor: principles and designing. Airlift, Fluidized Bed, Packed Bed, Photobioreactor, and Membrane bioreactor. Raw materials used in fermentation media. Solid state fermentation and submerged fermentation: their advantages and disadvantages.

Unit II: Microbial transformations with special reference to steroids and alkaloids. Primary and secondary metabolites. Commercial production of antibiotics with special reference to penicillin, streptomycin and their derivatives.

Unit III: Microbiology and production of alcoholic beverages: malt beverages, distilled beverages, wine and champagne. Commercial production of organic acids like acetic, lactic, citric, and gluconic acids. Commercial production of important amino acids (glutamic acid, lysine and tryptophan), insulin and vitamins (vitamin B12, riboflavin and vitamin A).

Unit IV: Immobilization of microbial enzymes and whole cells and their applications in industries. Food fermentations: bread, vinegar, fermented vegetables, fermented dairy products and their spoilage. Bioprocess Engineering: Downstream processing, various steps for large scale protein purification. Single cell proteins, Physiological aspects, SCP from waste materials and renewable resources.

Unit V: Industrial enzymes production: Cellulases, Xylanases, Proteases, Amylases, Lipases and Pectinases and their applications. Bioconversion of waste for fuels (ethanol and methane). Mushroom cultivation. Petroleum microbiology. Patent protection for biological inventions.

Suggested Readings (Latest Editions):

1. Reed G (2004). Industrial Microbiology. CBS Publishers (AVI Publishing Co.)
2. Stanbury PF, Whitekar A. and Hall (2006). Principles of Fermentation Technology. Pergaman. McNeul and Harvey.
3. Creuger and Creuger (2005). Biotechnology- A textbook of Industrial Microbiology, Panima pub.
4. Casida LE (2010). Industrial Microbiology, Wiley Eastern.
5. Atlas RM (Latest Edition). Petroleum Microbiology. Macmillan Publishing Co.
6. Willey J, Sherwood L. and Woolverton C (2014). Prescott's Microbiology, 9th edi McGraw Hil
7. B.D. Singh (2015). Biotechnology, Kalyani Publication

Practical Based on course Industrial Microbiology

1. To demonstrate strain improvement of industrially important bacteria or yeast by mutagenesis and selection of improved strains.
2. Introduction of fermenter (Assembly and dismantling).
3. Production of alcohols in shake flask cultures at laboratory scale.
4. Production of citric acid in shake flask cultures at laboratory scale.
5. To study the effect of salt concentration, metal and dyes on microbial growth.
6. Isolation of amylase producing microorganisms from Soil and their detection
7. To isolate antibiotic producing microorganisms form soil.
8. To isolate Penicillium species producing penicillin and to evaluate its activity.
9. Demonstration of SSF techniques.
10. Production of wine from grapes.
11. Production of bio-ethanol from agricultural waste.
12. To study mushroom production.
13. Production and application of various enzymes.

Course 15, Code- AM 305: Practical based on the above courses

AM 401: Project Report including Viva-voce 400 marks

AM 402: Medical Microbiology (specialization) 100 marks

AM 403: Industrial Microbiology (specialization)

AM 404: Agricultural Microbiology (specialization)

AM 405: Environmental Microbiology (specialization)

The candidate will opt any of the above mentioned four specializations which will be based on his/her project/thesis coupled with a written examination based on short questions including objective type to test his thorough knowledge in the field of specialization opted by him/her.

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Practical based on course Agricultural Microbiology

1. To study the effect of moisture content and organic matter on microbial activity, by
estimating hydrolysis of FDA
2. To determine microbial activity in the soil by measuring CO₂ evolution, and to study the
effect of moisture content and organic matter on microbial activity
3. To determine the following enzyme activities in the soil sample: Amylase, Cellulase,
Xylanase, Protease, and Phosphatase
4. Laboratory methods for studying soil-borne diseases
 - a. Isolation of soil-borne pathogens from plant tissue and soil.
 - b. Physical extraction of pathogens from soil.
 - c. Molecular methods for detection and identification of pathogens in plants and soil. By
monoclonal antibody based tests and PCR.
 - d. Quantification of population of pathogens in soil and estimation of inoculum potential by
MPN and dilution end point methods.
 - e. Chemical control of soil-borne pathogens using Acylanilide and Alkyl phosphonates.
5. Isolation of pathogen from vegetables and fruits.
6. Biochemical and physiological tests for detection of pathogens in fruits and vegetables, e.g;
Arginine hydrolysis for Pseudomonas.
7. To determine biological control activity of microbes against plant pathogens.
8. To demonstrate different processes of composting.
9. To study the microflora of rhizosphere and phyllosphere.
10. To study the different plant microbe interactions.

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Course 9, Code- AM 204: Environmental Microbial Technology

Unit I: Microbial Ecology versus Environmental Microbiology; Historical perspectives; Major fields and modern Environmental Microbiology; Overall role of microbes in ecosystem. Aeromicrobiology; Allergic disorders; Bioaerosols; Biowarfare agents; Air sampling of bioaerosols; microbial indicators for air pollution.

Unit II: Soil microorganisms and their significance in soil quality management. Microbial successions within and above the soil; biogeochemical cycles- C, N, S, P, Fe, Mn, Hg. Factors affecting microbial community in soil. Microbiomics and microbial interactions: Microflora of ruminants; Microbe-microbe interactions (Symbiosis, mutualism, commensalism, amensalism, competition, antibiosis)

Unit III: Microbes and heavy metal tolerance; Biocorrosion of metals; Microbe metal interactions (bioleaching, biomining, biohydrometallurgy); Containment of acid mine drainage applying biomining, abatement of heavy metal pollution, degradation of pesticides. Biosorption.

Unit IV: Microbial degradation, deterioration and bioremediation; Biodegradation of xenobiotics (biomagnifications) including pesticides and military chemicals (explosives and gases); Enhanced petroleum recovery; Integrated microbial bioremediation including oil spills; Role of biosurfactants. Role of microorganisms in organic matter decomposition (cellulose, hemicellulose, lignin).

Unit V: Microbes and water potability- Microbial growth patterns in aquatic environments. Purification of potable water; Sanitary analysis of water (indicator microbes and methods of their detection); Standards (tolerable levels) of water quality of fecal contamination. Microbes in solid waste and sewage management; Sanitary landfills and composting; Methods of sewage management (composition of sewage, small scale and modern sewage treatment methods – oxidation ponds, trickling filters, biodisc system); Measurement of water quality after sewage removal.

Suggested Readings (Latest Editions):

1. Sharma, P.D. (2016). Environmental Microbiology, Rastogi Publications.
2. Prakash S. Bisen (2014). Microbes in practice-I K international publication house pvt ltd.
3. Prakash S. Bisen (2012). Microbes-concepts and applications Willey BlackWell Pub.
4. Pepper IL, Gerba CP and Brusseau ML (2006). Environmental and Pollution Science. Academic Press. USA
5. Forster CF and John DA (2000). Environmental Biotechnology. Ellis Horwood Ltd. Publication.
6. Christon JH (Latest Edition). A Manual of Environment al Microbiology. ASM Publications.
7. Maier RM, Pepper IL and Gerba CP (2000). Environmental Microbiology. Academic Press. USA
8. Michel R (Latest Edition). Introduction of Environmental Microbiology.

Practical Based on course Microbial Environmental Technology

1. To measure the D.O. of the given water samples.
2. To measure the BOD of the given water samples.
3. To measure the COD of the given water samples.
4. To determine the effect of temperature on microbial growth.
5. To determine the effect of pH on microbial growth.
6. To determine the effect of oxygen on microbial growth.
7. To study the production of lignocellulolytic enzymes (cellulases, hemicellulases and lignin degrading enzymes such as Lip, Mnp and Laccase).
8. To study the fungal degradation of lignocellulosic biomass (Crop byproducts).
9. To study the use of cellulases in saacharification of cellulosic material.
10. To study the microbiological quality of water samples from different sources.
11. To study the decolorization of distillery or textile industrial waste.
12. Determination of potability of water by MPN method.

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Paper-XXVII

Recent trends in Biotechnology

75 marks

Biopesticides - (*Bt* genes)

- Biopolymers (β -hydroxy butyrate)
- Biopolysaccharide (Xanthum gum)

Synthetic cell

Human genome project: History and salient features.

Arabidopsis as a model plant for genetic engineering.

Antisense RNA Technology, RNAi

Cassette vectors.

Edible Vaccines

DNA Chips

Chloroplast Engineering

Terminator seed technology.

Seed storage proteins.

Therapeutic proteins.

Cryopreservation, transport of germplasm (semen, ovum, embryo).

Biotechnology of nitrogen fixation

Biotechnology for Biofuel production

Practicals: During 1st and 2nd year three practicals based on theory papers per year will be there for 50 marks each. For third year either three practicals of 75 marks each or a summer training carried out during the summer vacation after 2nd year, before the commencement of 3rd year may be taken up for 150 marks on the basis of summer training report and viva voce alongwith one practical based on paper nos. 19, 23, 24 for 75 marks.

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The Elective papers in the functional specialization will be as follows:

Marketing:

- M-1 Rural Marketing (0568005)
- M-2 Service Marketing (0568007)
- M-3 Retail Management (0668005)
- M-4 Digital Marketing (0668007)

Finance:

- F-1 Corporate Taxes-Direct and Indirect Tax (0568006)
- F-2 Financial Institutions & Investment Management (0568008)
- F-3 Cost and Management Accounting (0668006)
- F-4 Company Accounts (0668008)

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BBA-M-1: RURAL MARKETING

Unit: I Definition of Rural Marketing, Indian Rural Market, Environment: Population and its locations, occupation pattern, expenditure pattern, infrastructure facilities.

Unit II: The Rural Consumer: Characteristics, factors influencing his purchase decision, Rural demand: Nature, types of requirements, hierarchy of markets and rural market index, Problems in rural marketing as Warehousing and Transportation.

Unit III: Marketing of Agriculture Inputs: Consumable inputs and durable inputs: Marketing of Consumables and Durables: Composition of Products, Price, distribution, promotion, product redesign or modification needs.

Unit IV: Marketing of Agricultural Produce, Formation of Cooperative marketing and processing societies, marketing of rural/cottage industry/artisan products.

Unit V: Rural Marketing Strategies: Rural Market Segmentation, Strategies on product, price, promotion and distribution.

Suggested Readings:

- 1 Pradeep Kashyap Rural Marketing-2 edition Pearson education
2. Jha, S.M. & Singh, L.P.: Marketing Management in Indian Perspective, Himalaya, Bombay
3. Velayudhan – Rural Marketing (Sage)
4. Mathur- Rural Marketing (Excel Books)
5. Philip Kotler: Marketing Management.

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BBA-M-2: SERVICE MARKETING

UNIT-1:Introduction of Service Marketing: Introduction: Definition, Characteristics and Classification of Services, Difference between Product and Services marketing, Paradigms in Services Marketing, Present Marketing Environment, Services Marketing Mix: Understanding the 7 P's OF SERVICE MARKETING &UPCOMING CONCEPTS, Difficulties & Challenges in Service Marketing

UNIT- 2 Understanding Consumer Behaviour and Service Design; Strategies for Services Marketing: Segmentation, Targeting &Positioning, Differentiation. Understanding Consumer Behaviour: Services vis-à-vis goods, Consumer Behaviour in Services, Customer Expectations and Perceptions of Services .

UNIT- 3 Delivering, Pricing and Managing Service Promise (07 Hours): Service Development Design & Standards: New Service Development, Process Service Standards, Demand and Capacity Management in Delivering Services: Role of Employees and Customers in service delivery; Quality in Service marketing.

UNIT- 4 Service Process – Blue printing – Physical evidence. Pricing of Services: Pricing Considerations and Strategies, Managing Service Promise: Role of Advertising, Personal Selling, Sales Promotion, Publicity and Public Relations in service marketing

UNIT- 5 Service Performance: Evaluating Success of Service Offering: Service quality and measurement, Complaint handling, Service Guarantees. Role of CRM, The Gaps Model Of Service Quality, Latest issues in service marketing with reference to Uber, Ola, OYO, Swiggy, Zomato.

Suggested Readings:

- 1.Services Marketing, Zeithaml Valerie and Mary Jo Bitner, Gremler&Pandit, Tata McGraw Hill.
2. Services Marketing, Lovelock, Christopher. PrenticeHall.
3. Services Marketing, Nargundkar, Rajendra. Tata McGraw Hill.
4. The Essence of Services Marketing, Adrian Payne. PHI.
5. Services Marketing, Ravi Shankar. Excel Publishing

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BBA-M-3: RETAIL MANAGEMENT

Unit I: Introduction to Retailing: Concept of retailing, Functions of retailing, Retail formats and types, Retailing Channels, Retail Industry in India, Importance of retailing, changing trends in retailing.

Unit II: Understanding the Retail Consumer: Retail consumer behaviour, Factors influencing the Retail consumer, Customer decision making process, Types of decision making, Market research for understanding retail consumer.

Unit III: Retail Market Segmentation and Strategies: Market Segmentation and its benefits, Kinds of markets, Definition of Retail strategy, Strategy for effective market segmentation, Strategies for penetration of new markets, Growth strategies, Retail value chain.

Unit IV: Retail Location Selection: Importance of Retail locations, Types of retail locations, Factors determining the location decision, Steps involved in choosing a retail locations, Measurement of success of location.

Unit V: Merchandise Management: Meaning of Merchandising, Factors influencing Merchandising, Functions of Merchandising Manager, Merchandise planning, Merchandise buying, Analysing Merchandise performance.

Suggested Readings:

1. Retail Management 3rd Edition, Suja Nair, Himalaya Publishing House, Mumbai, 2008
2. Retail Management, 6th Edition, Michael Levy, Barton AWeitz and Ajay Pandit, Tata McGraw Hill Publishing Co. Limited, New Delhi.
3. Retail Management, Text and Cases 2nd Edition, Swapna Pradhan, Tata McGraw Hill Publishing Co. Limited, New Delhi.
4. The Art of Retailing, 2nd Reprint A.J Lamba, Tata McGraw Hill Publishing Co. Limited, New Delhi

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BBA-M-4: DIGITAL MARKETING

UNIT-1: Introduction of Digital Marketing, Importance of Digital Marketing, General Over View of Web Concept and Hosting | Domain, Website Planning.

UNIT-2: Search Engine Optimization (SEO), Black HAT and White HAT SEO, Importance of Search Engine Optimization (SEO), SEO On Page, What is SEO Off Page, Local SEO, SEO, Importance of Google Webmaster Tool.

UNIT -3: Social Media Marketing, Brand through Social Media Marketing (SMM), Importance of Social Media Marketing, How to Optimize Social Media, How Many Platform of Social Media, How to Make Business Pages or Profile on Social Media (Facebook, Twitter, Instagram, LinkedIn, Pinterest etc.) How to Create Paid Advertising on Social Media.

UNIT-4: Google Ad words, Importance of Google Paid Campaign, Types of Google Advertisement, Search | Display | Mobile | Shopping | Video Advertisement, Create Paid Campaign on Google Ad words, Bing Advertisement, Tracking Performance and Measurement with Google Analytics.

UNIT-5: Email Marketing, Lead Generation, Content Marketing, Importance of Content Writing, How to Promote Brand through Content, Online Reputation Management and Review Management, Affiliate Marketing, Internet Entrepreneurship with Google AdSense, How to get Project from USA| UK| CA and other Country, Freelancing, Internet Marketing Planning and Strategy.

Suggested Readings:

1. Puneet Singh Bhatia; Fundamentals Of Digital Marketing
2. Lan Dodson; The Art Of Digital Marketing
3. Damian Ryan; Understanding Digital Marketing
4. Vandana, Ahuja; Digital Marketing, Oxford University Press India (November, 2015).
5. Eric Greenberg, and Kates, Alexander; Strategic Digital Marketing: Top Digital Experts
6. Ryan, Damian; Understanding Digital Marketing: marketing strategies for engaging the digital generation; Kogan Page (3rd Edition, 2014).

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BBA-F-1: CORPORATE TAXES-DIRECT AND INDIRECT TAX

Unit-I: Income Tax Act 1961-special provisions relating to assessment of companies.

Unit- II: Concept of tax planning, tax avoidance and tax evasions, tax planning for new business with reference to location, nature and form of business.

Unit-III: Introduction of Indirect tax, definition and nature, Basis for charging indirect tax, constitutional framework of indirect tax before GST, structure of GST, slab of GST, GST council, GST Network.

Unit-IV: Levy and collection of GST: Taxable event – supply of goods and services, place of supply, within state, interstate, import and export, time of supply, valuation for GST- Valuation rules, excess tax, refund, TDS, registration of GST.

Unit-V: Custom law: introduction levy and collection, taxable event, valuation of import and export, refund & recovery.

Suggested Readings:

1. Direct Taxes: Singhanian V. K.
2. GST- Bare Act.

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BBA-F-2: FINANCIAL INSTITUTIONS AND INVESTMENT MANAGEMENT

Unit I: Overview of Capital Market: Market of securities, Stock Exchange and New Issue Markets – their nature, structure, functioning and limitations; Trading of securities: equity and debentures/ bonds. Regulatory Mechanism: SEBI and its guidelines.

Unit II: Portfolio Analysis and Selection: Portfolio concept, Portfolio risk and return, Selection of Portfolio: Capital market theorem, CAPM (Capital Asset Pricing Model) and Arbitrage Pricing Theory. Portfolio Management and Mutual Fund Industry

Unit III: DFIs in India - IDBI, ICICI, IFCI, NABARD, RRBs, State Level Institutions; NBFCs – Their status, types, working and strategies for commercial viability ; Insurance organizations – Their status , types, working and strategies for commercial viability.

Unit IV: Leasing and Hire Purchase: Industry. Size and scope. Parties involved, Evaluation of Lease transaction, Types of lease and their implications, Hire purchase and lease - differences and implications for the business. Consumer Credit and Plastic Money – concept, working uses of each.

Unit V: Mutual Funds : Concept, Types, Significance of Mutual Funds, NAV, Evolution & Growth of Mutual Funds, Role of Registrar, Underwriter according to SEBI guidelines.

Suggested Readings:

- 1) Khan M Y - Financial Services (Tata McGraw Hill, 1998)
- 2) Machiraju H R - Indian Financial System (Vikas, 2004)
- 3) Bhole L M - Financial Institutions and Markets (Tata McGraw-Hill, 3rd edition, 2003)
- 4) Srivastava ,R.M& Nigam Divya - Management of Financial Institutions (Himalaya, 2003)

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BBA-F-3: COST AND MANAGEMENT ACCOUNTING

Unit-I: Introduction: Nature and Scope of Cost Accounting, Cost, concepts and Classification, Methods and Techniques, Concept of Management Accounting, Relationship of Cost and Management Accounting.

Unit –II: Elements of Cost, Assessment of Cost, Classification of Costs, Preparation of Cost Sheet and Statement of Cost, Tender Costing.

Unit –III: Cost–Volume Profit Analysis; Break Even Analysis and Decision Making, Marginal Costing and Absorption Costing.

Unit–IV: Budgetary Control, Standard Costing and Analysis of Variances.

Unit–V: Responsibility Accounting, Transfer Pricing, Activity Based Pricing, Value Chain Analysis, Target Costing, Life Cycle Costing.

Suggested Readings:

1. Maheshwari S.N.: Advanced Problem and Solutions in Cost Accounting
2. Khan& Jain: Management Accounting
3. Gupta, S.P.: Management Accounting
4. K. G. Gupta : Cost and Management Accounting.

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BBA-F-4: Company Accounts

Unit- I: Issue of Shares and Debentures: Issue, Forfeiture and re-issue of Shares, Redemptions of Preference Shares; Issue and redemption of Debentures.

Unit-II: Accounting for special issue: Bonus issue, Employee stock option plan, Buy back of Shares.

Unit-III: Profit prior to Incorporation, Disposal of Profits, Valuation of Shares.

Unit-IV: Final Accounts: As per latest format prescribed under the Companies Act. 2013.

Unit-V: Consolidated Balance Sheet of Holding Companies with one subsidiary only.

Suggested Readings:

1. Company Accounts; K. G. Gupta
2. Advanced Accounts; Shukla & Grewal
3. Corporate Accounts; Himalya Publications
4. Advanced Accounts; Jain & Narang

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M.COM. II SEMESTER

RESEARCH METHODOLOGY

COURSE CODE 0730104

Max. Marks 25+75=100

Learning Objectives: To make the student aware of the methodology of research.

		No. of Lecture Allotted
Unit I:	Understanding Research: Definition, Meaning, Characteristics, Objective and Motivation Research, Types of Research, Research in Decision Making, Role of Research in Various Areas, Limitations of Research.	12
Unit II	Scientific Methods of Research: Definition, Characteristic and Basis of Scientific Method, Basis of Scientific Method, Components of Scientific Approach, Bias and Prejudice in scientific Research.	12
Unit III	Formulating Research Problem and Hypothesis: Research Process/ Planning Process, Research Problem – Need of Defining, Points to Ponder on Research Problem, Time and Space of Co-ordination, Environment Conditions, Hypothesis Testing, Research Design.	12
Unit IV	Methods of Research: Interview Definition, Meaning, Type, Advantage and Limitation; Questionnaire-Meaning Purpose, Types, Formulation, Advantage and Disadvantage; Survey -Definitions, Meaning, objective, Characteristics, types, planning, limitation and advantages; Experiment – Meaning, Objective, Advantage and Disadvantage, Basic Principles of Experimentation, Experimental Designs.	13
Unit V	Scaling and Attitudes Measurement Techniques: Attitudes, Attributes and Beliefs, Attitudes Measurement, Scaling Techniques, Types of Scales, Selection of an Approximate Scale, Limitations of Attitudes Measurement Scales. Data Presentation Processing and Analysis: Editing, Coding, Classification, Tabulation, Analysis and Interpretation of Data.	11

M.COM. IV SEMESTER

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MANAGEMENT INFORMATION SYSTEM

COURSE CODE 0730105

Max. Marks 25+75=100

Learning Objectives: To make the M.Com. Students Awareness regarding Management Information System.

		No. of Lectures Allotted
Unit I:	Management Information System (MIS): Concept & definition, Role of MIS< Process of Management, MIS-A tool for management process, Impact of MIS, MIS and computers, MIS and the user, IMS- a support to the Management.	12
Unit II	Planning & Decision making: The concept of corporate planning, Strategic planning Type of strategic, Tools of Planning, MIS Business Planning; Decision making concepts, Methods, tools and procedures, Organizational Decision making, MIS and Decision making concepts.	12
Unit III	Information ^ System: Information concepts, Information: A quality product classification of the information, Methods of data & information collection, Value of information, MIS and System concept, MIS and System analysis, Computer System Design.	12
Unit IV	Development of MIS: Development of long range plans of the MIS. Ascertaining the class of information, determining the Information requirement, Development and Implementation of the MIS, Management of quality in the MIS, Organization for development of the MIS, MIS: the factors of success and failure.	11
1	Decision Support System (DSS): Concept and Philosophy, DSS: Deterministic Systems, Artificial intelligence (AI) System, Knowledge based expert system (KBES), MIS and the role of DSS, Transaction Processing System (TPS), Enterprise Management System (EMS), Enterprise Resource Planning (ERP) System, Benefits of ERP, EMS and ERP.	13

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M.COM. II SEMESTER

PAPER 4 – ADVANCED MANAGEMENT ACCOUNTING

COURSE CODE 0830104

Max. Marks 25+75=100

Learning Objectives: To provide the expert knowledge of Management Accounting

		No. of Lecture Allotted
Unit I:	Management Accounting – Nature & Functions, Financial Vs. Management Accounting; Cost Vs. Management Accounting; Role of Management Accountant, Cost Concepts and Classifications.	11
Unit II	Activity Based Costing (ABC)- Concept and uses; Flow of Costs in ABC; Emerging Costing Approaches; Traditional Costing System Vs. ABC	11
Unit III	Variable and Absorption Costing – Concept, Comparison, Applications of Variable Costing, Preparation of Income Statements. Cost-Profit (CVP) Analysis – Contribution Margin; Break -Even Analysis: Profit Volume (P/V) Analysis, Multiple Product Analysis; Optimal use of Limited Resources. Standard Costing – Concept, Advantages; Types of Standards; Variance Analysis; Materials and Labour Variance.	15
Unit IV	Relevant information & Short- Run Managerial Decisions – Managerial Decision Making; Decision Making Process; Differential Analysis; Types of Managerial Decisions – Make/Buy, Add/Drop, Sell/Process Further, Operate/Shutdown, Special Order, Product – Mix Pricing Decisions.	12
Unit V	Responsibility Accounting & Divisional Performance Measurement – Advantages and Disadvantages of Divisionalisation; Concept of Responsibility Accounting; Responsibility Centers – Cost Centre, Revenue Centre, Profit Centre, Investment Centre, Responsibility Performance Reporting, Financial Measures of Performance, Non Financial Performance Measures.	11

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M.COM. II SEMESTER

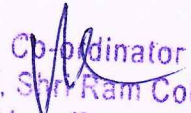
CUSTOMER RELATIONSHIP MANAGEMENT

COURSE CODE 0830105

Max. Marks 25+75=100

Learning Objectives: To make the student of the Management awareness of Customer Relationship.

		No. of Lecture Allotted
Unit I:	Introduction to CRM: Definition and concepts of CRM, Components of CRM, Understanding the goal of CRM and Customer Touch Points.	12
Unit II	CRM Process: Introduction and Objectives of a CRM Process; an Insight into CRM and e-CRTA/online CRM, The CRM cycle i.e. Assessment Phase; Planning Phase; The Executive Phase; Modules in CRM, 4C's (Elements) of CRMJ Process, CRM Process for Marketing Organization, CRM Affiliation in Retailing Sector.	14
Unit III	Developing CRM Strategy: Role of CRM in business strategy, Understanding Service Quality: Technical, Functional, and dimensions of service quality, Managing Customer communications.	12
Unit IV	CRM Implementation: Choosing the right CRM Solution; Framework for Implementing CRM; a step by step process; Five phases of CRM Projects: Development Customizations; Beta Test and Data Import; Train and Retain: Roll out and system hand off support.	13
Unit V	Sales Force Automation – Sales Process, Activity, Contact, Lead and Knowledge Management; Field Force Automation, CRM Links in E-Business: E-Commerce and Customer Relationships on the Internet, Supplier; Role and Importance.	9


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MARKETING MANAGEMENT I- 4004

Learning Objective: The objective of this course is to facilitate the understanding of the conceptual framework of marketing and its application in decision making under various environmental constraints.

- Unit I:** **Introduction:** Nature and Scope of marketing, Core Concepts, Marketing environment - macro and micro components and their impact on marketing decisions.
Buyer behavior and factors affecting buyer behavior, Consumer buying decision process, industrial buying decision process.
Market segmentation, targeting and positioning.
- Unit II:** **Product and Pricing decision :** Concept and Classification of product, Product mix
Major product decisions- branding, packaging, labeling, New product development, product life cycle. Pricing: pricing objectives, factors affecting pricing, pricing strategies:
- Unit III:** **Distribution(Place) and Promotion decision :** Concept of Channels of Distribution ,
Functions and types of distribution channels, Channel management decisions, Distribution logistics, channel integration.
Promotion: Concept of Integrated marketing communication, promotion mix--
Advertising, Personal selling, Sales promotion, Publicity and public relations.
- Unit IV:** **Marketing Planning, Organization and control:** marketing planning process, methods of organizing marketing department, Ethical and legal aspects of marketing, marketing audit and marketing control.
- Unit V:** **Trends in marketing:** Social marketing, marketing of services, Green marketing digital marketing, customer relationship marketing, rural marketing and other emerging trends in marketing.

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International Marketing (I- 4005)

Learning Objective: The objective of this course is to make the students understand the conceptual framework of international business and familiarize them with trends and developments in the international arena.

- Unit I:** **Introduction to international marketing:** Nature and Importance of international marketing, Transition from domestic to international marketing, Modes of entry in international markets, International market orientation-EPRG framework, Characteristics of MNCs, International Product life cycle.
- Unit II:** **International marketing environment:** Internal environment, External environment: geographical, Demographic, Economic, Socio-cultural, Political and legal environment.
Business culture around the world, marketing strategy adaptations.
- Unit III:** **International marketing planning:** international market selection, international marketing research.
International Organizing and control: issues in international marketing planning, International marketing information system, Organizing and controlling, International marketing operations.
- Unit IV:** **International marketing Mix Decisions:**
Product decisions : Product planning for global markets, Standardization vs. product adaptation, New product development, Management of international brands, Packaging and labeling
Pricing decisions: International pricing policies and strategies.
Promotion decisions: International advertising, Personal selling, Sales promotion and public relations.
Distribution channels and logistics: functions and types of channels, Channel selection decision, international logistics decisions.
- Unit V:** **Emerging issues and developments in international marketing:** ethical and social issues in international marketing , information technology and international marketing, Development and scope of international law and regional economic groupings.


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SECURITIES ANALYSIS & PORTFOLIO MANAGEMENT (I- 4002)

Learning objective: Student should have an expert knowledge of securities analysis and portfolio management.

- Unit I:** **Introduction:** Nature and scope of investment analysis, elements of investment, avenues of investment, approaches to investment analysis, concept of return and risk, measurement of return and risk. Financial assets: types and their characteristics, sources of financial information. New Financial Instruments.
- Unit II:** **Valuation of Securities:** Bonds, debentures, preference shares and equity shares, fundamental analysis- Economic analysis, industry analysis and company analysis.
- Unit III:** **Technical Analysis:** trends, indicators, indices and moving averages applied to technical analysis. Efficient market hypothesis: weak, semi-strong and strong market and its testing techniques.
- Unit IV:** **Portfolio Analysis :** estimating rate of return and standard deviation of portfolio, effect of combining the securities, Markowitz risk-return optimization, single index model or market model, portfolio total risk, portfolio market risk and unique risk,. Simple Sharpe's optimization solution.
- Unit V:** **Portfolio Performance Evaluation:** Measure of return, risk adjusted measure of return ,market timing, evaluation criteria and procedures. Portfolio diversification.

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SECURITIES LAWS & CAPITAL MARKETS (I- 4003)

Learning objective: To make the learners aware of the prevailing Securities laws and have an understanding of Indian capital market.

- Unit I:** Securities Contracts(Regulations)Act 1956 : Objectives of the Act, Important Definitions, Provisions relating to Public issue and listing of securities.
- Unit II:** Securities and Exchange Board of India Act, 1992: Objectives, powers and functions of SEBI; Securities Appellate Tribunal; Penalties and Appeals.
- Unit III:** Depositories Act, 1996: Objectives and important provisions of the Act; Dematerialization & Re-materialisation; Depository Process.
- Unit IV:** Primary Capital Market : Important instruments and intermediaries, capital Market Investors–Domestic Financial Institutions(DFI), Qualified Institutional Buyers(QIB), Foreign Portfolio Investors(FPI), Private Equity, Angel Funds, High Net Worth Individuals, Venture Capital, Pension Funds, Alternative Investment Funds.
Capital Market Instruments- Equities, Preference Shares, Shares with Differential Voting Rights, Corporate Debt, Foreign Currency Exchangeable Bonds (FCEB), Indian Depository Receipts (IDR), Derivatives and Warrants.
Aspect of Primary Market-Book Building, Green Shoe Option.
- Unit V:** Secondary Capital Market : Development of Stock Market in India, Stock Market and its operations, Trading Mechanism, Basis of Sensex and Nifty, Surveillance Mechanism, Risk management in secondary market.

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Max. Marks 100

Human Resource Management (I- 4006)

Learning Objective: To Provide expert knowledge of principles and practices of Human Resource Management required for management of business organizations.

- Unit I:** **Introduction:** Concepts and evolution of Human resource management, Human resource management functions, Human resource management in dynamic environment. Human Resource Planning :-Concept, Process of Human resource Planning, Forecasts-demand analysis, Quantitative and Qualitative aspects of Human resource planning. Concept of Job analysis and Job description. Recruitment and selection:- Process and policies, Induction and Placement.
- Unit II:** **Human Resource Training and Development :** Identification of training needs, Learning Principles of Training, Types of Training, Training Methods. Executive Development Programmes, Training vs Development, Career planning and succession planning.
- Unit III:** **Compensation Management :** Nature of employee benefits-statutory and customary, Wage plans and policies, Profit sharing and incentive plan, Compensation package and terminal benefits, Impact of compensation and Employees benefits and Organizational effectiveness, Employee benefit programmes.
- Unit IV:** **Performance Appraisal :** Concept, Process of Performance Appraisal, Methods and Limitations, Performance Appraisal Practices in India.
- Unit V:** **Human Resource Organisation:** Line and staff relationship, Morale and Productivity, Creating conducive work environment.

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Max. Marks 100

INDUSTRIAL RELATIONS & LABOUR LAWS (I-4007)

Learning Objective: To Provide conceptual frame work of Industrial Relation, To make Student aware with the Indian Labour legislation and To make students aware with the basic requirement and mandate of labour legislations.

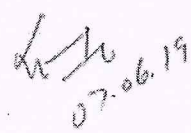
Unit I: **Structure and Evolution of Industrial Relations:** Concept, Nature and models of IR: Major contemporary developments in global economy and its impact on industrial relations scenario in India.

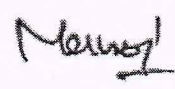
Unit II: **Trade Unionism, Negotiations and Collective bargaining:** Concept of Trade unionism , Development of trade unionism, Functions, Types and structure, Problem and Suggestive remedial measures of trade unions.
Collective bargaining: Nature and functions; Types of bargaining; Collective bargaining in the Indian context; Negotiating a collective bargaining agreement.

Unit III: **Industrial conflict & disputes Resolutions** - Concept , forms of Industrial conflicts, Dynamics of conflicts and collaborations, Trends in industrial conflict Nature, Causes and Types of Industrial disputes.
Industrial disputes : preventive machinery
Industrial disputes : settlement machinery

Unit IV: Factories Act, 1948 and the Employee's compensation Act, 1948, Important provisions

Unit V: Trade Union Act 1926 and the Industrial Disputes Act, 1947, Important provisions



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Programme: B.Com.	Year: First	Semester: First
Subject: Commerce		
Course Code: C010103T	Course Title: Business Communication	
Course outcomes: To acquire skills in reading, writing, comprehension and communication, and also to use electronic media for business communication.		
Credits: 6	Core Compulsory / Elective: Elective	
Max. Marks: 25+75	Min. Passing Marks:10+25	
Total No. of Lectures: 90		

Unit	Topics	No. of Lectures
I	Introduction Process and Importance of Communication, Types of Communication (verbal & Non Verbal), Different forms of Communication. Barriers to Communication: Linguistic Barriers, Psychological Barriers, Interpersonal Barriers, Cultural Barriers, Physical Barriers, Organizational Barriers. Role, effects and advantages of technology in Business Communication like email, text messaging, instant messaging and modern techniques like video conferencing, social networking. Strategic importance of e-communication.	22
II	NON-Verbal Aspects of Communicating: Body Language, Kinesics, Proxemics, Paralanguage. Effective Listening: Principles of Effective listening, Factors affecting listening exercises, Oral, Written and video sessions, Interviewing skills: Appearing in interviews, Writing resume and letter of application. Modern forms of communicating: E-Mail, Video Conferencing etc.	21
III	Business language and presentation Importance of Business language, Vocabulary Words often confused Words often misspelt, Common errors in English. Oral Presentation Importance, Characteristics, Presentation Plan, Power point presentation, Visual aids. Writing skills: Planning business messages, Rewriting and editing, The first draft and Reconstructing the final draft. Office Correspondence: Official Letter, Semi Official Letter And Memorandum.	31
IV	Report Writing Identify the types of reports, define the basic format of a report, identify the steps of report writing, write a report meeting the format requirements, determine the process of writing a report, importance of including visuals such as tables, diagrams and charts in writing report, apply citation rules (APA style documentation) in reports.	16

Suggested Readings:

1. Lesikar, R.V. & Flatley, M.E.; Basic Business Communication Skills for Empowering the Internet Generation, Tata McGraw Hill Publishing Company Ltd. New Delhi.
 2. Bovee, and Thill, Business Communication Today, Pearson Education
 3. Shirley, Taylor, Communication for Business, Pearson Education
 4. Locker and Kaczmarek, Business Communication: Building Critical Skills, TMH
 5. Misra, A.K., Business Communication (Hindi), Sahitya Bhawan Publications Agra
- Note- Latest edition of the text books should be used.

This course can be opted as an elective by the students of following subjects:
Open for all

Suggested Continuous Evaluation Methods: Continuous Internal Evaluation shall be based on allotted Assignment and Class Tests. The marks shall be as follows:

Assessment and Presentation of Assignment	(04 marks)
Class Test-I (Objective Questions)	(04 marks)
Class Test-II (Descriptive Questions)	(04 marks)
Class Test-III (Objective Questions)	(04 marks)
Class Test-IV (Descriptive Questions)	(04 marks)
Overall performance throughout the Semester (includes Attendance, Behavior, Discipline, Participation in Different Activities)	(05 marks)

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Programme: B.Com.	Year: First	Semester: First
Subject: Commerce		
Course Code: C010104T	Course Title: Introduction to Computer Application	
Course outcomes: The objective of this course is to provide basic knowledge of computer, DBMS, data base language and word processing.		
Credits: 6	Core Compulsory / Elective: Elective	
Max. Marks: 25+75	Min. Passing Marks:10+25	
Total No. of Lectures: 90		

Unit	Topics	No. of Lectures
I	Computer: An Introduction- Computer in Business, Elements of Computer System Set-up; Indian computing Environment, components of a computer system, Generations of computer and computer languages; Software PC- Software packages-An introduction, Disk Operating system and windows: Number systems and codes.	22
II	Relevance of Data Base Management Systems and Interpretations of Applications; DBMS system Network, Hierarchical and relational database, application of DBMS systems.	21
III	Data Base Language, dbase package, Basics of data processing; Data Hierarchy and Data file structure, Data files organizations; Master and Transaction file. Programme development cycle, Management of data, processing systems in Business organization.	25
IV	Word processing: Meaning and role of word processing in creating of document, Editing, formatting and printing document using tools such as spelling checks, Data Communication Networking-LAN & WANS.	22

Suggested Readings:

1. Gill, N. S, "Handbook of Computer Fundamentals", Khanna Publishing House, Delhi
2. Shrivastava "Fundamental of Computer & Information Systems" (Wiley Dreamtech)
3. Leon A and Leon M., "Introduction to Computers" (Vikas, 1st Edition).
4. R.S. Salaria, "Computer Fundamentals", Khanna Publishing House, Delhi.
5. Norton P., "Introduction to Computers", (TATA McGraw Hill)
6. Leon "Fundamentals of Information Technology", (Vikas)
7. Ravichandran, A., "Computers Today", Khanna Publishing House, Delhi.
8. Sinha, P.K., "Computer Fundamental", BPB Publications (Hindi and English)
9. Laudon & Laudon, "Management Information System"

Note- Latest edition of the text books should be used.

This course can be opted as an elective by the students of following subjects:
Open for all

Suggested Continuous Evaluation Methods: Continuous Internal Evaluation shall be based on allotted Assignment and Class Tests. The marks shall be as follows:

Assessment and Presentation of Assignment	(04 marks)
Class Test-I (Objective Questions)	(04 marks)
Class Test-II (Descriptive Questions)	(04 marks)
Class Test-III (Objective Questions)	(04 marks)
Class Test-IV (Descriptive Questions)	(04 marks)
Overall performance throughout the Semester (includes Attendance, Behaviour, Discipline, Participation in Different Activities)	(05 marks)

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Programme: B.Com.	Year: First	Semester: Second
Subject: Commerce		
Course Code: C010204T	Course Title: Essentials of E-commerce	
Course outcomes: This course is to familiarize the student with the basic of e-commerce and to comprehend its potential.		
Credits: 6	Core Compulsory / Elective: Elective	
Max. Marks: 25+75	Min. Passing Marks: 10+25	
Total No. of Lectures: 90		

Unit	Topics	No. of Lectures
I	Internet and Commerce: Business Operations in Commerce Practices Vs Traditional Business Practices; Benefits of E-Commerce to Organization, Consumers, And Society; Limitation of E-Commerce.	20
II	Application in B2C: Consumers Shopping Procedure on The Internet; Products in B2C Model; E-Brokers; Broker- Based Service Online; Online Travel Tourism Services; Benefits and Impact of E-Commerce on Travel Industry, Online Stock Trading and Its Benefits; Online Banking and Its Benefit; Online Financial Services and its Future.	25
III	Application in B2B: Applications of B2B; Key Technologies for B2B, Characteristics of The Supplier Oriented Marketplace, Buyer Oriented Marketplace and Intermediate Oriented Marketplace; Just in Time Delivery in B2B.	30
IV	Applications in Governance: EDI In Governance; E Government; E Governance Applications Of The Internet, Concept Of Government-To-Business, Business-To-Government And Citizen-To-Government; E-Governance Models; Private Sector Interface In E Governance.	15

Suggested Readings:

1. Pt Joseph Of E-Commerce Are Indian Perspective Php Learning Private Limited
2. Nidhi Dhawan Introduction To E-Commerce International Book House Private Limited
3. Agarwal Kamlesh And And Agarwal Diksha Bridge To The Online To A Front New Delhi India Macmillan India (Hindi and English)
4. Manali- Danielle Internet And Internet Engineering Tata Mcgraw-Hill New Delhi
5. Pandey- Concept Of E-Commerce, S.K. Kataria And Sons(Hindi and English)

Note- Latest edition of the text books should be used.

This course can be opted as an elective by the students of following subjects:
Open for all

Suggested Continuous Evaluation Methods: Continuous Internal Evaluation shall be based on allotted Assignment and Class Tests. The marks shall be as follows:

Assessment and Presentation of Assignment	(04 marks)
Class Test-I (Objective Questions)	(04 marks)
Class Test-II (Descriptive Questions)	(04 marks)
Class Test-III (Objective Questions)	(04 marks)
Class Test-IV (Descriptive Questions)	(04 marks)
Overall performance throughout the Semester (includes Attendance, Behaviour, Discipline, Participation in Different Activities)	(05 marks)

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Programme: B.Com.	Year: First	Semester: Second
Subject: Commerce		
Course Code: C010205T	Course Title: Business Economics	
Course outcomes: Business Economics objective this course is meant to acquaint the students with the principles of Business Economics as are applicable in business.		
Credits: 6	Core Compulsory / Elective: Elective	
Max. Marks: 25+75	Min. Passing Marks:10+25	
Total No. of Lectures: 90		

Unit	Topics	No. of Lectures
I	Famous Economist of India like- Kautilya, Gopal Krishna Gokhale, D.R. Gadgil, Dr. Ram Manohar Lohia, Jawaharlal Nehru and Dr. B.R. Ambedkar etc. Introduction: Nature And Scope Of Business Economics, Meaning, Kinds, Law Of Demand, Law Of Marginal Diminishing Utility, Elasticity Of Demand, Concept And Measurement Of Elasticity Of Demand Price, Incoming Cross, Elasticity Determinants Of Elasticity Of Demand Importance Of Elasticity Of Demand.	22
II	Theory Of Cost: Short Run And Long Run Cost Curve Traditional And Modern Approaches. Production Function: Law Of Variable Proportion; Properties Ride Line, Optimum Factor Combination And Expansion Path; Return To Scale; Internal And External Economics And Diseconomies.	31
III	A. Perfect Competition: Meaning, Price And Output Determination. B. Monopoly: Meaning And Determination Of Price Under Monopoly; Equilibrium Of A Firm/Industry. C. Monopolistic Competition: Meaning And Characteristics; Price And Output Determination Under Monopolistic Competition.	21
IV	Business Cycle: Various Phases And Its Causes; Theory Of Distribution: Marginal Productivity Theory Of Modern Theory, Wage- Meaning, Determination Of Wage Rate Under Perfect Competition And Monopoly, Rent Concept: Modern Theories Of Rent: Interest Concept- And Theories Of Interest Profit- Concept And Theories Of Profit.	16

Suggested Readings:

1. Geetika, "Managerial Economics", McGraw-Hill Education 2nd Ed.
2. Thomas & Maurice, "Managerial Economics: Concepts and Applications" (SIE), , McGraw Hill Education, 9th Ed
3. Ahuja, H.L, "Managerial Economics", S.Chand, 8th Ed
4. Dwivedi, D.N., "Managerial Economics", Vikas Publication, 7th Ed
5. Mithani, D.M., "Managerial Economics- Theory and Applications", Himalaya Publications
6. Gupta, G., "Managerial Economics", McGraw-Hill Education (India) Pvt Limited
7. Seth, M.L., "Principles of Economics", Lakshmi Narain Agrawal Educational Publishers, Agra
8. Vaish & Sunderm, "Principles of Economics", Ratan Prakashan Mandir
9. Jhingan, M.L., "Managerial Economics -1E", Vrinda Pub
10. Jhingan, M.L., Vyashthi Arthashastra, Vrinda Pub 11. Mishra, J.P., Vyashthi Arthashastra

Note- Latest edition of the text books should be used.

This course can be opted as an elective by the students of following subjects:

Open for all

Suggested Continuous Evaluation Methods: Continuous Internal Evaluation shall be based on allotted Assignment and Class Tests. The marks shall be as follows:

Assessment and Presentation of Assignment	(04 marks)
Class Test-I (Objective Questions)	(04 marks)
Class Test-II (Descriptive Questions)	(04 marks)
Class Test-III (Objective Questions)	(04 marks)
Class Test-IV (Descriptive Questions)	(04 marks)
Overall performance throughout the Semester (includes Attendance, Behaviour, Discipline, Participation in Different Activities)	(05 marks)

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Programme: B.Com.		Year: Second	Semester: Third
Subject: Commerce			
Course Code: C010303T		Course Title: Business Regulatory Framework	
Course outcomes: The objective of this course is to provide a brief idea about the framework of Indian Contract Act,1872 and Sale of Goods Act,1930.			
Credits: 6		Core Compulsory / Elective: Elective	
Max. Marks: 25+75		Min. Passing Marks:10+25	
Total No. of Lectures: 90			
Unit	Topics	No. of Lectures	
I	Indian Contract Act, 1872: Definition & Nature of Contract, Classification; Offer & Acceptance; Capacity of Parties; Free Consent; Consideration; Legality of Objects	20	
II	Void Agreements; Performance of Contracts; Discharge of Contract; Contingent Contracts; Quasi Contracts; Remedies for Breach of Contract, Special Contracts: Indemnity & Guarantee; Bailment & Pledge; Contract of Agency.	24	
III	Sale of Goods Act, 1930: Contract of Sale of Goods, Conditions & Warranties; Transfer of Ownership; Performance of the Contract: Remedial Measures; Auction able Claims.	25	
IV	Negotiable Instrument Act: Cheque, Promissory Note, Bill of Exchange, Crossing of Cheque, Dishonour of Cheque, Payment in due Course.	21	
Suggested Readings: 1. Kuchal M.C: Business Law; Vikas Publishing House, New Delhi. 2. Chandha P.R: Business Law; Galgotia, New Delhi. 3. Kapoor N.D: Business Law; Sultan Chand & Sons, New Delhi. (Hindi and English) 4. Desai T.R.: Indian Contract Act, Sale of Goods Act and Partnership Act; S.C. Sarkar & Sons Pvt. Ltd., Kolkata. 5. Tulsian, P.C., Business Law, New Delhi, Tata McGraw Hill. 6. Sharma, Sanjeev, Business Regulatory Framework, Jawahar Publication, Agra Note- Latest edition of the text books should be used.			
This course can be opted as an elective by the students of following subjects: Open for all			
Suggested Continuous Evaluation Methods: Continuous Internal Evaluation shall be based on allotted Assignment and Class Tests. The marks shall be as follows:			
Assessment and Presentation of Assignment		(04 marks)	
Class Test-I (Objective Questions)		(04 marks)	
Class Test-II (Descriptive Questions)		(04 marks)	
Class Test-III (Objective Questions)		(04 marks)	
Class Test-IV (Descriptive Questions)		(04 marks)	
Overall performance throughout the Semester (includes Attendance, Behaviour, Discipline, Participation in Different Activities)		(05 marks)	

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Programme: B.Com.		Year: Second	Semester: Third
Subject: Commerce			
Course Code: C010304T		Course Title: Inventory Management	
Course outcomes: After completing this course a student will have: ✓ Ability to understand the concept of Inventory Management along with the basic laws and axioms of Inventory Management. ✓ Ability to understand the terminologies associated with the field of Inventory management and control along with their relevance. ✓ Ability to identify the appropriate method and techniques of Inventory management for solving different problems. ✓ Ability to apply basic Inventory management principles to solve business and industry related problems. Ability to understand the concept of Working Capital Management, Demand Analysis and Obsolescence.			
Credits: 6		Core Compulsory / Elective: Elective	
Max. Marks: 25+75		Min. Passing Marks:10+25	
Total No. of Lectures: 90			
Unit	Topics		No. of Lectures
I	Management of Working Capital: Concept , Meaning, Classification, Factors determining Working Capital requirements, Sources of Working Capital, Need of Working Capital, Working Capital Ratio- current ratio, quick ratio, absolute liquid ratio, cash ratio and working capital turnover ratio.		22
II	Inventory Management: Concept, meaning, Inventory Management Process, Why inventory management is important? Principles of Inventory Management, How to improve inventory management, perpetual inventory system, what are inventory costs, Role of Inventory Management, Methods of Inventory Management, Benefits of good Inventory Management.		26
III	Concept and Valuation of Inventory: Concept and Objectives of Inventory, Need for holding Inventory, Planning and controlling Inventory levels, Effects of excess inventory on business, Product Classification, Product Coding, Lead Time, Replenishment Methods.		24
IV	Inventory Control: Concept and Meaning of Inventory Control, Objectives and Importance and Essentials of Inventory Control, Types of Inventory, Techniques of Inventory Control – EOQ, ROP, ABC, VED, JIT, Determination of Inventory levels, Impact of Inventory Inaccuracy, Disposal of Obsolete and Scrap items, Reasons for Obsolescence, Control of Obsolescence, Control of Scrap.		18
Suggested Readings: 1. Muller M. (2011), Essentials of Inventory Management, AMACON. 2. Narayan P. (2008), Inventory Management, Excel Books. 3. Gopalkrishnan P. (1977), Materials Management, PHI Learning Pvt. Ltd. 4. Chitale A.K. & Gupta R.C. (2014), Materials Management, PHI Learning Pvt. Ltd. 5. Chapman Stephen (2017), Introduction to Materials Management, Pearson Publishing. Note- Latest edition of the text books should be used.			
This course can be opted as an elective by the students of following subjects: Open for all			
Suggested Continuous Evaluation Methods: Continuous Internal Evaluation shall be based on allotted Assignment and Class Tests. The marks shall be as follows:			
Assessment and Presentation of Assignment			(04 marks)
Class Test-I (Objective Questions)			(04 marks)
Class Test-II (Descriptive Questions)			(04 marks)
Class Test-III (Objective Questions)			(04 marks)
Class Test-IV (Descriptive Questions)			(04 marks)
Overall performance throughout the Semester (includes Attendance, Behaviour, Discipline, Participation in Different Activities)			(05 marks)

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Minor Paper-1(Economics)

BASIC ECONOMICS

- Unit - I: Scope and Method: Nature of Economic Laws: Micro economics *versus* Macro Economics; Concept of margin; Cardinal *versus* Ordinal approach of Utility; Indifference curve analysis and its properties; Consumer Surplus, and Consumer's equilibrium.
Demand Analysis: Demand function and law of demand; Concept of elasticity-price, cross and income elasticity of demand.
- Unit - II: Economic Systems: Capitalism, Socialism and Mixed economy; Problem of resource allocation.
- Unit - III: Production: Production function, Combination of factors, Laws of production- Returns to scales, Law of variable proportions; Isoquant and its properties.
- Unit - IV: Nature of Costs and Markets: Cost functions- Short-run and long-run cost curves; Structure of Markets: Nature of perfect competition, monopoly and monopolistic competition; Equilibrium of firm.
- Unit - V: National Income Analysis: Concepts, Methods of measurement; Circular flow of income; Concept of inflation and employment; Sources of income - Central, State and Local Governments in India.

Books Recommended:

1. An Introduction to Positive Economics - R. G. Lipsey
2. Economics - Samuelson and Nordhaus
3. Modern Micro Economics - A. Koutsoyiannis
4. Principles of Micro Economics - Mankiw
5. Principles of Macro Economics - Mankiw
6. Advanced Economic Theory - H. L. Ahuja
7. Micro Economic Theory - Gould and Ferguson
8. Indian Economy - A. N. Agarwal
9. Public Finance - T. N. Hazela



Minor Paper-2(Economics) Fundamentals of Indian Economy

- Unit-1 Introduction:** Nature and Characteristics of Indian Economy; Planning Commission: History of Five Year Plans in India, NITI Ayog: Strategy for future development.
- Unit-2 Indian Public Finance:** Budget Classification: Revenue Account v/s Capital Account; canons of public expenditure; canons of taxation; direct v/s indirect taxes; brief idea of Indian federal system.
- Unit-3 Indian Agriculture:** Nature and Problems of Indian Agriculture; Agricultural credit and agricultural marketing; Commission for agricultural costs and prices (CA&P)& Agricultural Price Policy; Farm Management.
- Unit-4 Indian Industry:** Nature & Problems of Indian Industry; Industrial Finance; Industrial Policies since independence, Public sector v/s Private sector, Foreign Trade.
- Unit-5 Indian Monetary System:** Structure of Banking System: Central bank, Commercial Bank, Foreign Banks; Bank v/s Non-Bank financial Institutions.

Basic Reading List:

- | | | |
|---|----------------------------------|--|
| 1 | Ruddar Datt & K.P.M. Sundaram | : Indian Economy |
| 2 | A.N. Aggarwal | : Indian Economy Problems of Development and Planning |
| 3 | Uma Kapila | : Indian Economy Since Independence |
| 4 | Jean Dreze & Amartya Sen | : Indian Development-Selected Regional Perspectives |
| 5 | Kaushik Basu | : India's Emerging Economy-Performance and Prospects in the 1990s & beyond |
| 6 | Shankar Acharya and Rakesh Mohan | : India's Economy-Performance and Challenges |
| 7 | Mishra and Puri | : Indian Economy |




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Total - 24 pages

SYLLABUS FOR MNOR SUBJECTS

FIRST PAPER: PHYSICAL EDUCATION

SUBJECT : PHYSICAL EDUCATION - THEORY		
Course Code:	Course Title: Health : Personal & Environmental	
Credits : 04		General Elective
Course Outcomes: Students can be able to understand various aspects of health with respect to personal and environmental. In this subject students will study about personal health, environmental health. Personal Health is the ability to take charge of your health by making conscious decisions to be healthy. Environmental Health focuses on the interrelationships between people and their environment, promotes human health and well-being, and fosters healthy and safe communities.		
Max. Marks : 25+75		Min. Passing Marks : 10 + 25
Total No. of Lectures-Tutorials-Practical (in hours per week): -TLP:4-0-0		
UNIT	TOPIC	NO. OF LECTURES
I	HEALTH & HEALTH EDUCATION • Meaning & Definition of Health Education • Aim, objective and Principles of Health Education • Scope & Importance of Health Education • Meaning & Definition of Health • Dimensions of Health	06
II	NUTRIATION, NUTRIENTS AND DIET • Meaning & Definition of Nutrition, Nutrients & Diet • Basic Nutrition Guidelines • Sources of Nutrients : Macro & Micro Nutrients • Adulteration & Malnutrition • Balance Diet & Preparation of Dietary Chart	07
III	HEALTH PROBLEMS • Obesity & their Management • Personal and Environmental Hygiene • Environmental Sanitation • Care of Skin, Eyes, Ears, Teeth & Nose • Brief Introduction to Air Pollution, Water Pollution, Soil Pollution, Noise Pollution, Thermal Pollution	08
IV	DISEASES : COMMUNICABLE & NON COMMUNICABLE • Meaning & Definition of Disease, Congenital Disease & Acquired Disease • Meaning & Definition of Communicable & Non Communicable Disease • Communicable Diseases (Contagious & Non Contagious) - Viral Diseases & Bacterial Diseases,	08

	Non Communicable Diseases – Blood Pressure, Diabetes	
V	POSTURE AND POSTURAL DEFFORMITIES - Meaning & Definition of Posture - Causes of Bad posture - Postural Deformities & their Correctives Exercises & Yogasanas	08
VI	FIRST AID - Meaning & Definition of First Aid - Qualities of First Aider - Dressing & Bandages for Wound, Soft Tissue Injury, Bone Injury & Joints Injury - Hand Washing & Hygiene - Dealing with an Emergency like Cardiac Arrest- Resuscitation (Basics) - Fast Evacuation Techniques - Transport Techniques	07
VII	PSYCHOLOGICAL & MENTAL HEALTH - Meaning & Definition of Mental Health - Mental Health Problems in the India - Mental Health First Aid Action Plan - Understanding Depression and Anxiety Disorders	08
VIII	ENVIRONMENTAL HEALTH - Definition, Scope, Need and Importance of Environmental Health. - Concept of Environmental Health - Tree Plantation, Plastic Recycling & Probation of Plastic Bag / Cover. - Celebration World Environment Day and it's Importance	08

Suggested Readings:

- Griffith H. Winter (1986). Complete Guide to Sports Injuries, The Barkley Publishing Group, New York.
- Herman Koren & Michael S. Bisesi (2018). Handbook of Environmental Health, CRC Press LLC, Broken Sound Parkway Northwest, Suite 300 Boca Raton, FL 33487 United States
- Norris, C.M. (1997). Sports Injuries- Diagnosis and Management for Physiotherapists, Butterworth Heinemann, Lanacre House, Jordan Hill, Oxford OXZSDP, A division of Reed Educational and Professional publishing Ltd. New Delhi
- Pandey, K.G. (2011). Sharirik Siksha, Shri Gyan Sagar Publication, Meerut
- Park, K. (2009), Preventive and Social Medicine, M/s Banarsidas Bhanot Publishers, 1167, Prem Nagar, Jabalpur
- Pearce, Evelyn C. (1997). Anatomy & Physiology for Nurses, Jaypee Brothers, New Delhi
- Singh, S. N. (2018). Swasth Siksha, Khel Sahitya Kendra, Daryaganj, New Delhi

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- Verma, K. K.(1996). Health & Physical Education,Tandon Publication, Ludhiana
- Waugh, A. & Grant, A. (2014). Anatomy & Physiology in Health and Illness,Churchill Livingstone Elsevier

This course can be opted as an elective by the students of following subjects: **Open for all**

Continuous Evaluation Methods: (CIE)

INTERNAL ASSESMENT (25 Marks)

Written Test – 10 marks

Assignment/ Research Based Project - 10 marks

Attendance – 5 marks

Research Orientation of the student.

Suggested equivalent online courses:

- IGNOU
- Other centrally/state operated Universities / MOOC platforms such as “SWAYAM” in India and Abroad.
- Rajarshi Tandon open University.

FIRST PAPER PRACTICAL : PHYSICAL EDUCATION

Program/Class: Certificate		Year:	Semester:
SUBJECT : PHYSICAL EDUCATION - PRACTICAL			
Course Code:		Course Title: Personal & Environmental Health	
Course Outcomes: Students can be able to understand various aspects of health with respect to personal and environmental in a practical manner.			
Credits: 02		Elective	
Max. Marks : 25 + 75		Min. Passing Marks: 10 + 25	
Total No. of Lectures-Practical (in hours per week):L-T-P: 0-0-2			
UNIT	TOPICS		NO. OF HOURS
	PART – A		
I	PERSONAL HEALTH: • First Aid for -Sprain, Fracture, Burn & Drowning • Measurement of Blood Pressure & Sugar • Measurement of BMI • Prepare chart for percentage of the students having Flat Foot, Claw Foot & Normal Foot College students		15
	PART – B		
II	ENVIRONMENTAL HEALTH: • Procedure for waste management – Biodegradable & Non Biodegradable • Procedure for rain water harvesting • Way to prevent us from Communicable Diseases		15

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BoS (Education)(Arts)

Minor Course-1

(3 Credits - 45 hrs)

Population and Environmental Education

1. Population and Demography : (10)

- a. Meaning and Importance.
- b. Related Terms.
- c. Population Composition : In World & India.
- d. Census of India 1951 to till now : An Analysis.
- e. Population Growth and its Consequences and Effects.
- f. Quality life and Population.
- g. Effects of Over Population on Development of a Nation.

2. An Introduction to Environment : (8)

- a. Environment & Ecosystem.
- b. Biotic and Abiotic Components of Environment.
- c. Earth and Biosphere.
- d. Natural Resources.

3. Environmental Issues and Social Concerns : (15)

- a. Major Environmental Issues :
 - i. Population.
 - ii. Natural & Manmade Disasters.
- b. Social Concerns to Environmental issues :
 - i. Environmental Ethics.

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c. Indian Culture and Environmental Protection.

4. Education for SAM :

(12)

a. Environmental Education : Concept and Objectives.

b. Environment Education at Different levels of Education.

c. Components of Responsible Environmental Behaviour among Students & Teachers.

d. Population Education:

i. Need & Objectives.

ii. Action Strategies to Control Population Explosion.

Minor Course- 2

(3 Credits - 45 hrs)

Life Skill & Value Education

1. Skills & Life Skills :

a. Concept & Importance.

b. Ancient Indian Education & Life Skills.

c. Life Skills by WHO.

Apurva Singh (8)

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PROGRAMME /CLASS: CERTIFICATE	B.A. I YEAR	SEMESTER : I/II
Subject: Hindi Minor (only for students of other subjects)		
COURSE CODE:	COURSE TITLE भाषा तत्त्व विवेचन, छंद व अलंकार	
Course Outcomes: हिंदी से इतर विषय के विद्यार्थियों हेतु भाषा से संबंधित यह पाठ्यक्रम बहुपयोगी सिद्ध होगा, साथ ही इससे साहित्य के शास्त्रीय पक्ष की ओर भी उनकी रुचि वर्द्धित होगी।		
CREDITS : 4	MAX MARKS : 75 (+25)	MIN. PASSING MARKS: 33
Total No. of Lecturers–Tutorials–Practicals (in hours per week) 3-0-0 or 2-1-0 Etc.		
Unit	Topic	No. of Lecturer
I	ध्वनि –वर्ण, स्वर ध्वनियाँ, व्यंजन ध्वनियाँ। शब्द भंडार –तत्सम, तद्भव, विदेशी, देशज शब्द। समानार्थक, विपरीतार्थक शब्द	12
II	पद/वाक्यांश हेतु एक शब्द। श्रुतिसमभिन्नार्थक शब्द।	06
III	प्रचलित मुहावरें व कहावतें।	08
IV	शब्द– लेखन में होने वाली अशुद्धियाँ। वाक्य खंडों में होने वाली अशुद्धियाँ। वाक्य रचना संबंधी अशुद्धियाँ।	10
V	छंद – परिभाषा, लक्षण व प्रयोग। दोहा, चौपाई, सोरठा, बरवै, कुंडलियाँ। शब्द–शक्ति– अभिधा, लक्षण, व्यंजना।	12
VI	अलंकार– परिभाषा, लक्षण व प्रयोग। अनुप्रास, उपमा, रूपक, यमक, श्लेष, उत्प्रेक्षा, प्रतीप, विरोधाभास, अतिशयोक्ति, संदेह, वीप्सा, भ्रांतिमान।	12

संदर्भ ग्रंथ सूची :-

- | | |
|---|--------------------------------|
| 1. भाषा विवेचन | — डॉ० भगीरथ मिश्र |
| 2. हिंदी भाषा का वर्तमान रूप | — चंद्रगुप्त वार्ष्णेय |
| 3. हिंदी भाषा की संधि संरचना | — डॉ० भोलानाथ तिवारी |
| 4. भाषा : अर्थ और संवेदना | — राजमल बोरा |
| 5. हिंदी भाषा की संरचना | — डॉ० मुकेश अग्रवाल |
| 6. हिंदी भाषा की इतिहास | — धीरेंद्र वर्मा |
| 7. प्रयोजन मूलक हिंदी: संरचना एवं अनुप्रयोग | — राम प्रकाश, दिनेश गुप्त |
| 8. हिंदी प्रयोग | — रामचंद्र वर्मा, बदरीनाथ कपूर |
| 9. भारतीय अर्थभाषा और हिंदी | — सुनीति कुमार चाटुर्ज्या |
| 10. हिंदी की शब्द-संपदा | — विद्यानिवास मिश्र |
| 11. वृहद हिंदी पर्यायवाची शब्द कोश | — गोविंद चातक |
| 12. हिंदी भाषा का विकासात्मक परिचय
और व्याकरणिक स्वरूप | — सतीश शर्मा |
| 13. हिंदी का सामान्य ज्ञान (भाग-1) | — हरदेव बाहरी |
| 14. हिंदी का सामान्य ज्ञान (भाग-2) | — हरदेव बाहरी |
| 15. हिंदी व्याकरण | — कामता प्रसाद गुरु |
| 16. हिन्दी काव्यांग : रस, छंद, अलंकार | — डॉ० नरेश मिश्र |

NON-GRADIAL COURSES

29. NSS/NCC/Physical Education & Yoga Practices 2(0+2) AG-I12A/B/C

Theory

Course aims at evoking social consciousness among students through various activities viz., working together, constructive and creative social work, to be skilful in executing democratic leadership, developing skill in programme development to be able for self employment, reducing gap between educated and uneducated, increasing awareness and desire to help sections of society. Following activities are to be taken up under the NSS course:

- Introduction and basic components of NSS: Orientation
- NSS programmes and activities
- Understanding youth
- Community mobilization
- Social harmony and national integration
- Volunteerism and shramdan
- Citizenship, constitution and human rights
- Family and society
- Importance and role of youth leadership
- Life competencies
- Youth development programmes
- Health, hygiene and sanitation
- Youth health, lifestyle, HIV AIDS and first aid
- Youth and yoga
- Vocational skill development
- Issues related environment
- Disaster management
- Entrepreneurship development
- Formulation of production oriented project
- Documentation and data reporting
- Resource mobilization
- Additional life skills
- Activities directed by the Central and State Government

All the activities related to the National Service Scheme course is distributed under four different courses viz., National Service Scheme I, National Service Scheme II, National Service Scheme III and National Service Scheme IV each having one credit load. The entire four courses should be offered continuously for two years. A student enrolled in NSS course should put in at least 60 hours of social work in different activities in a semester other than live regular one day camp in a year and one special camp for duration of 7 days at any semester break period in the two year.

Different activities will include orientation lectures and practical works. Activities directed by the Central and State Government have to be performed by all the volunteers of NSS as per direction.

SYLLABUS

Semester I

National Service Scheme 1 Introduction and basic components of NSS: AG-112A

Orientation: history, objectives, principles. symbol, badge; regular programmes under NSS, organizational structure of NSS, code of conduct for NSS volunteers, points to be considered by NSS volunteers awareness about health NSS programmes and activities

Concept of regular activities, special camping, day camps, basis of adoption of village/slums, conducting survey, analysing guiding financial patterns of scheme, youth programme/ schemes of GUI, coordination with different agencies and maintenance of diary

Understanding youth

Definition, profile. profile, categories, issues and challenges of youth; and opportunities for youth who is agent of the social change

Community mobilisation

Mapping of community stakeholders, designing the message as per problems and their culture; identifying methods of mobilisation involving youth-adult partnership

Social harmony and national integration

Indian history and culture, role of youth in nation building, conflict resolution and peace-building

Volunteerism and shramdan

Indian tradition of volunteerism, its need, importance, motivation and constraints; shramdan as part of volunteerism

Citizenship, constitution and human rights

Basic features of constitution of India, fundamental rights and duties, human rights, consumer awareness and rights and rights to information Family and society

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Concept of family, community (PRIs and other community based organisations) and society

Semester I:

National Cadet Corps

AC-112B

1. Aims, objectives, organization of NCC and NCC song. DG's cardinals of discipline.
2. Drill- aim, general words of command, attention, stands at ease, stand easy and turning.
3. Sizing, numbering, forming in three ranks, open and close order march and dressing.
4. Saluting at the halt, getting on parade, dismissing and falling out.
5. Marching, length of pace, and time of marching in quick/slow time and halt. Side pace, pace forward and to the rear.
6. Turning on the march and wheeling. Saluting on the march.
7. Marking time, forward march and halt.
8. Changing step, formation of squad and squad drill.
9. Command and control, organization, badges of rank, honours and awards
10. Nation Building- cultural heritage, religions, traditions and customs of India. National integration.
11. Values and ethics, perception, communication, motivation, decision making, discipline and duties of good citizen.
12. Leadership traits, types of leadership. Character/personality development.
13. Civil defense organization, types of emergencies. fire fighting, protection.
14. Maintenance of essential services, disaster management, aid during development projects.
15. Basics of social service, weaker sections of society and their needs, NGO's and their contribution. contribution of youth towards social welfare and family planning.
16. Structure and function of human body, diet and exercise, hygiene and sanitation.
17. Preventable diseases including AIDS, safe blood donation, first aid, physical and mental health.
18. Adventure activities
19. Basic principles of ecology. environmental conservation, pollution and its control.
20. Precaution and general behaviour of girl cadets, prevention of untoward incidents, vulnerable parts of the body, self defense.

Semester 1:

Physical Education and Yoga Practices

2(0+2) AG-112C

1. Teaching of skills of Football - demonstration, practice of the skills, correction, involvement in game situation (For girls teaching of Tennikoit)

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2. Teaching of different skills of Football - demonstration, practice of the skills, correction, involvement in game situation (For girls teaching of Tennikoit)
3. Teaching of advance skills of Football - involvement of all the skills in game situation with teaching of rules of the game
4. Teaching of skills of Basketball - demonstration, practice of the skills, correction of skills, involvement in game situation
5. Teaching of skills of Basketball - demonstration, practice of the skills, involvement in game situation
6. Teaching of skills of Basketball - involvement of all the skills in game situation with teaching of rule of the game
7. Teaching of skills of Kabaddi - demonstration, practice of the skills, correction of skills, involvement in game situation
8. Teaching of skills of Kabaddi - demonstration, practice of the skills, correction of skills, involvement in game situation
9. Teaching of advance skills of Kabaddi - involvement of all the skills in game situation with teaching of rule of the game
10. Teaching of skills of Ball Badminton - demonstration, practice of the skills, correction of skills, involvement in game situation
11. Teaching of skills of Ball Badminton - involvement of all the skills in game situation with teaching of rule of the game
12. Teaching of some of Asanas - demonstration, practice, correction and practice
13. Teaching of some more of Asanas - demonstration_ practice, correction and practice
14. Teaching of skills of Table Tennis - demonstration, practice of skills, correction and practice and involvement in game situation
15. Teaching of skills of Table Tennis - demonstration, practice of skills, correction and practice and involvement in game situation
16. Teaching of skills of Table Tennis - involvement of all the skills in game situation with teaching of rule of the game
17. Teaching - Meaning, Scope and importance of Physical Education
18. Teaching - Definition, Type of Tournaments
19. Teaching - Physical Fitness and Health Education
20. Construction and laying out of the track and field (*The girls will have Tennikoit and Throw Ball).
1. Teaching of skills of Hockey - demonstration practice of the skills and correction.

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2. Teaching of skills of Hockey - demonstration practice of the skills and correction. And involvement of skills in games situation
3. Teaching of advance skills of Hockey - demonstration practice of the skills and correction. Involvement of all the skills in games situation with teaching of rules of the game
4. Teaching of skills of Kho-Kho - demonstration practice of the skills and correction.
5. Teaching of skills of Kho-Kho - demonstration practice of the skills and correction. Involvement of the skills in games situation
6. Teaching of advance skills of Kho-Kho - demonstration practice of the skills and correction. Involvement of all the skills in games situation with teaching of rules of the game
7. Teaching of different track events - demonstration practice of the skills and correction.
8. Teaching of different track events - demonstration practice of the skills and correction.
9. Teaching of different track events - demonstration practice of the skills and correction with competition among them.
10. Teaching of different field events - demonstration practice of the skills and correction.
11. Teaching of different field events - demonstration practice of the skills and correction.
12. Teaching of different field events - demonstration practice of the skills and correction.
13. Teaching of different field events - demonstration practice of the skills and correction with - competition among them.
14. Teaching of different asanas - demonstration practice and correction.
15. Teaching of different asanas - demonstration practice and correction.
16. Teaching of different asanas - demonstration practice and correction,
17. Teaching of different asanas - demonstration practice and correction.
18. Teaching of weight training - demonstration practice and correction.
19. Teaching of circuit training - demonstration practice and correction.
20. Teaching of calisthenics - demonstration practice and correction.

Note:

- Compulsory Uniform: Half pants, Tee Shirts, Shoes and socks all white (Girls will have white Tee Shirt and Track pants)
- The games mentioned in the practical may be inter changed depending on the season and facilities.

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List Remedial Course in B.Sc Agriculture (Hons.) during the 2023-24

Program code	Program Name	Course code	Remedial Course Name	Year of introduction
209	B.Sc Ag (Hons)	148010	Basic Agriculture-I	2023-24
		148011	Introductory Biology	2023-24
		148012	Basic Agriculture-II	2023-24
		148013	Elementary Mathematics	2023-24

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REMEDIAL COURSES

1. Agricultural Heritage

1(1+0) AG-109

Theory

Introduction of Indian agricultural heritage; Ancient agricultural practices. Relevance of heritage to present day agriculture; Past and present status of agriculture and farmers in society; Journey of Indian agriculture and its development from past to modern era; Plant production and protection through indigenous traditional knowledge; Crop voyage in India and world; Agriculture scope; Importance of agriculture and agricultural resources available in India; Crop significance and classifications; National agriculture setup in India; Current scenario of Indian agriculture; Indian agricultural concerns and future prospects.

2. General Agriculture-I

2(1+1) AG-110A

Agriculture of Intermediate standard including Agronomy, Soil Science, Horticulture, Plant Pathology

3. General Agriculture-II

2(1+1) AG-111A

Agriculture of Intermediate standard including Ag Engg. Animal Husbandry and economics

4. Introductory Biology

2(1+1) AG-110B

Theory Introduction to the living world, diversity and characteristics of life, origin of life, Evolution and Eugenics. Binomial nomenclature and classification Cell and cell division. Morphology of flowering plants. Seed and seed germination. Plant systematic- viz; Brassicaceae, Fabaceae and Poaceae. Role of animals in agriculture. **Practical** Morphology of flowering plants - root, stem and leaf and their modifications. Inference, flower and fruits. Cell, tissues & cell division. Internal structure of root, stem and leaf. Study of specimens and slides. Description of plants - Brassicaceae. Fabaceae and Poaceae.

Theory

Straight lines : Distance formula, section formula (internal and external division), Change of axes (only origin changed). Equation of co-ordinate axes, Equation of lines parallel to axes, Slope-intercept form of equation of line, Slope-point form of equation of line. Two point form of equation of line, Intercept form of equation of line, Normal form of equation of line, General form of equation of line, Point of intersection of two st. lines, Angles between two st. lines, Parallel lines, Perpendicular lines, Angle of bisectors between two lines. Area of triangle and quadrilateral. Circle: Equation of circle whose centre and radius is known, General equation of a circle, Equation of circle passing through three given points, Equation of circle whose diameters is line joining two points (x_1, y_1) & (x_2, y_2) > Tangent and Normal to a given circle at given point (Simple problems), Condition of tangency of a line $y = mx + c$ to the given circle $x^2 + y^2 = a$. Differential Calculus : Definition of function, limit and continuity, Simple problems on limit, Simple problems on continuity, Differentiation of x^n , e^n , $\sin x$ & $\cos x$ from first principle, Derivatives of sum, difference, product and quotient of two functions, Differentiation of functions of functions (Simple problem based on it), Logarithmic differentiation (Simple problem based on it), Differentiation by substitution method and simple problems based on it. Differentiation of Inverse Trigonometric functions. Maxima and Minima of the functions of the form $y=f(x)$ (Simple problems based on it). Integral Calculus : Integration of simple functions, Integration of Product of two functions, Integration by substitution method, Definite Integral (simple problems based on it), Area under simple well-known curves (simple problems based on it). Matrices and Determinants: Definition of Matrices, Addition. Subtraction, Multiplication. Transpose and Inverse up to 3rd order. Properties of determinants up to 3rd order and their evaluation.

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(B.O.S. 06-09-21, AC.....)

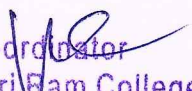
(For University Department and Colleges)

Semester-III

Course-XIV Special Paper (any one of the following)

MM 100 (Ext. 50, Int. 50)

- (a) Online Journalism**
- (b) Environment Communication**


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Semester-III

Course-XIV (a)

Online Journalism

MM 100 (Ext. 50, Int. 50)

Objective: This course aims to introduce the fundamentals of online journalism. The study of this course will equip the students to understand the communication technology, internet, e-journalism, cyber media and cyber deviation (crime).

Unit-I	Internet Journalism	(12 Hrs.)
1.	An overview of Internet Journalism	
2.	Internet as a medium of Communication	
3.	Cyber Space	
4.	WWW and Other Services	
5.	Browsers and its Types	
Unit-II	Introduction to Online Journalism	(12 Hrs.)
1.	Brief History of E-journalism	
2.	Meaning and Characteristics of Online Journalism	
3.	Benefits of Online Journalism	
4.	Use of Multimedia in Online Journalism	
5.	Features of Online Journalism	
Unit-III	Preparing Online Packages	(12 Hrs.)
2.	Main Considerations	
3.	Approach to online journalism	
4.	Forms of Online Packages	
5.	Rules for Writing Online	
6.	Creative Packages	
Unit-IV	Media Convergence	(12 Hrs.)
1.	Meaning	
2.	Effects of Convergence	
3.	VOIP	
4.	Benefits of Convergence	
5.	New Trends in Media Convergence	
Unit-V	Revenue, Ethics and Law	(12 Hrs.)
1.	Financing online Journalism	
2.	Revenue from Subscription and Advertising, Subscription Models	
3.	Modes of Online Advertising	
4.	Ethical Considerations	
5.	Cyber Laws	

(Total Hrs. 60)

Recent Articles: Every year two recent articles related to contents will be prescribed

Pedagogy: Teaching will be based on- Lectures, presentations, Discussions, Seminars, Discussion on recent articles. This will be supplemented with on using computer lab, internet services.

Books Recommended:

Bansal, S.K.

2002: Internet Technologies, New Delhi, APH Pub.

Nagpur, Wadhwa

2002: Law of Press, New Delhi, Wadhwa Sales Corporation, (4th ed.)

Nath, Shyam

2002 : Assessing the State of Web Journalism, New Delhi, Author Press

Ahmad, Tabraj

2003: Cyber Laws E-commerce and M-commerce, New Delhi, APH Publication

Menon, Shailja

2003: Protection of Intellectual Property in Cyber Space, Delhi, Authors Press

Talesra, Hemlata/Nagda, M.L.

2003 : Web Paged Learning, Delhi, Authors Press

Chakravorthy, Jagdish

2004 : Net, Media and the Mass Communication, New Delhi, Author Press

Ray, Tapas

2009: Online Journalism: A Basic Text, New Delhi, Cambridge University Press India Pvt. Ltd.

Verma, Deepika

2015 : The Era of New Media, New Delhi, A. R. Publication

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(For University Department and Colleges)

Semester-III

MM 100 (Ext. 50, Int. 50)

Course-XIV(b)

Environment Communication

Objective: This course aims to familiarize and provide knowledge of Environment and its different aspects. Role and importance of national and international organizations in environmental protection and environmental laws are also specific features of this course.

Unit-I Environment

1. Environment : Concept and Perspectives (12 Hrs.)
2. Environment and society
3. Environment Pollution
4. Relation of Environment with Development, Economy and Health –Brudtland Report
5. Need of Environmental Communication

Unit-II Protection of Environment

1. India's National Environmental Policy (12 Hrs.)
2. Ministry of Environment and Forest Govt. of India
3. Department of Environment Uttar Pradesh
4. Environmental Laws
5. Traditional Practice and Modern ways to Protect Environment, Public Awareness

Unit-III International Issues of Environment

1. Global Warming (12 Hrs.)
2. Green House Gas Emissions
3. Earth Summits
4. Developed vs. Developing Nations
5. Role of United Nations Organizations in Environment Protection

Unit-IV Clean River Campaign and Waste Management

1. National Mission for Clean Ganga (12 Hrs.)
2. Yamuna Action Plan
3. Waste Management : Problems and Solutions
4. Hazardous Waste : Scale and Problems
5. World Water Situation and conflict

Unit-V Environmental Movements in India

1. Chipko Movement (12 Hrs.)
2. The Silent Valley Project
3. Appiko Movement, Jungle Bachao Andolan
4. Narmada Bachao Andolan, Tehri Dam Project
5. Bhopal Gas Tragedy

(Total Hrs. 60)

Recent Articles: Every year two recent articles related to contents will be prescribed

Pedagogy: Teaching will include - Lectures, PowerPoint presentations, Seminars, Workshops, Discussion of recent articles in media. Students participation in discussions and seminars, Practical exercises of Environmental Reporting and writing will be encouraged and will be essential part of teaching pedagogy.

Books Recommended:

R. Rajagopalan

2005: Environmental Studies "From Crisis to Cure", New Delhi, Oxford Press

Abraham, Raimola

2010 : Journalism and Environment News, New Delhi, Kanishka Publication

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