

**Degree courses offered by the Department of Agricultural Economics**

	Semester	Title	Credits	Faculty
1.	II	AEC 158: <i>Fundamental Economics</i>	2+0	Agriculture
	II	AEC 151: <i>Introductory Economics</i>	2+0	Horticulture
	II	AEC 150: <i>Entrepreneuership Development &amp; Busibess Management</i>	2+1	Ag. Engg
	III	AEC 206 <i>Agricultural Finance &amp; Cooperation</i>	2+1	Agriculture
	IV	AEC 257: <i>Agricultural Marketing ,Trade &amp; Prices</i>	2+1	Agriculture
	IV	AEC264 <i>Agribusiness Management (Elective-NEW)</i>	2+1	Agriculture
	V	AEC 307: <i>Farm Management, Production &amp; Resource Economics</i>	1+1	Agriculture
	VI	AEC 351: <i>Fundamentals of Agribusiness Management</i>	1+1	Agriculture
	VI	AEC 358: <i>Horti- Business Management</i>	2+0/2+1	Horticulture
	VI	AEC 352: <i>Agribusiness Management &amp; Trade</i>	3+0	Ag. Engg
	VI	AEC 364: <i>Agricultural Policy Analysis (Elective-NEW)</i>	2+1	Agriculture
	VII (M)	AEC 451: <i>Marketing Management &amp; Agricultural Marketing</i>	2+1	Agriculture
	VII (M)	AEC 452 <i>Agribusiness Management</i>	2+1	Agriculture
	VII (M)	AEC 453: <i>Farm Planning &amp; Management</i>	2+1	Agriculture
	VIII	RAWE***/		Agriculture

**Bidhan Chandra Krishi Viswavidyalaya**

**AGRICULTURAL ECONOMICS**

**Second Semester: B. Sc (Ag.) Hons**

**1. AEC 158: Fundamentals of Agricultural Economics Credits: 2 (2+0)**

**Economics:** Meaning, scope and subject matter, definitions, activities, approaches to economic analysis; micro and macro economics, positive and normative analysis. Nature of economic theory; rationality assumption, concept of equilibrium, economic laws as generalization of human behavior. Basic concepts: Goods and services, desire, want, demand, utility, cost and price, wealth, capital, income and welfare.

**Agricultural economics:** meaning, definition, characteristics of agriculture & horticulture, importance and its role in economic development. Planning and development of agriculture and allied sectors in the country.

**Demand:** meaning, law of demand, demand schedule and demand curve, determinants, utility theory; law of diminishing marginal utility, equi-marginal utility principle. Consumer's equilibrium and derivation of demand curve, concept of consumer surplus. Elasticity of demand: concept and measurement of price elasticity, income elasticity and cross elasticity. Production: process, creation of utility, factors of production, input output relationship.

**Laws of returns:** Law of variable proportions and law of returns to scale.

**Cost:** Cost concepts, short run and long run cost curves. Supply: Stock v/s supply, law of supply, supply schedule, supply curve, determinants of supply, elasticity of supply.

**Market structure:** meaning and types of market, basic features of perfectly competitive and imperfect markets. Price determination under perfect competition; short run and long run equilibrium of firm and industry, shut down and break even points.

**Distribution theory:** meaning, factor market and pricing of factors of production. Concepts of rent, wage, interest and profit.

**National income:** Meaning and importance, circular flow, concepts of national income accounting and approaches to measurement, difficulties in measurement. Concept of money and inflation.

**Population:** Importance, Malthusian and Optimum population theories, natural and socio-economic determinants, current policies and programmes on population control.

**Tax:** public revenue and public expenditure meaning, direct and indirect taxes, agricultural taxation, VAT.

**Economic systems:** Concepts of economy and its functions, important features of capitalistic, socialistic and mixed economies, elements of economic planning.

### Third Semester

#### **B.Sc. (Ag.) Hons**

**AEC 206: Agricultural Finance and Co-Operation**

**Credits: 3(2+1)**

#### **Theory**

**Agricultural Finance**-meaning, scope and significance, credit needs and its role in Indian agriculture. **Agricultural credit:** meaning, definition, need, classification.

**Credit analysis:** 4 R's, and 3C's of credits. Sources of agricultural finance: institutional and non-institutional sources, commercial banks, social control and nationalization of commercial banks, Micro financing including KCC. Lead bank scheme, RRBs, Scale of finance and unit cost.

**An introduction to higher financing institutions** – RBI, NABARD, ADB, IMF, World Bank, Insurance and Credit Guarantee Corporation of India. Cost of credit. Recent development in agricultural credit.

Preparation and analysis of financial statements– Balance Sheet and Income Statement. Basic

guidelines for preparation of project reports- Bank norms–SWOT analysis.

**Agricultural Cooperation**–Meaning, brief history of cooperative development in India, objectives, principles of cooperation, significance of cooperatives in Indian agriculture. Agricultural Cooperation in India- credit, marketing, consumer and multi-purpose cooperatives, farmers' service cooperative societies, processing cooperatives, farming cooperatives, cooperative warehousing; role of ICA, NCUI, NCDC, NAFED.

### **Practicals**

Determination of most profitable level of capital use. Optimum allocation of limited amount of capital among different enterprise. Analysis of progress and performance of cooperatives using published data. Analysis of progress and performance of commercial banks and RRBs using published data. Visit to a commercial bank, cooperative bank and cooperative society to acquire firsthand knowledge of their management, schemes and procedures. Estimation of credit requirement of farm business – A case study. Preparation and analysis of balance sheet – A case study. Preparation and analysis of income statement – A case study. Appraisal of a loan proposal – A case study.

Techno-economic parameters for preparation of projects. Preparation of Bankable projects for various agricultural products and its value added products. Seminar on selected topics.

### **Fourth Semester: B.Sc. (Ag.) Hons**

**AEC 257: Agricultural Marketing, Trade and Prices Credits: 3(2+1)**

#### **Theory**

**Agricultural Marketing:** Concepts and definitions of market, marketing, agricultural marketing, market structure, marketing mix and market segmentation, classification and characteristics of agricultural markets; demand, supply and producer's surplus of agri-commodities: nature and determinants of demand and supply of farm products, producer's surplus – meaning and its types, marketable and marketed surplus, factors affecting marketable surplus of agri-commodities; product life cycle (PLC) and competitive strategies: Meaning and stages in PLC; characteristics of PLC; strategies in different stages of PLC; pricing and promotion strategies: pricing considerations and approaches – cost based and competition based pricing; market promotion – advertising, personal selling, sales promotion and publicity – their meaning and merits & demerits.

**Marketing process and functions:** Marketing process-concentration, dispersion and equalization; exchange functions – buying and selling; physical functions – storage, transport and processing; facilitating functions – packaging, branding, grading, quality control and labeling (Agmark); Market functionaries and marketing channels: Types and importance of agencies involved in agricultural

marketing; meaning and definition of marketing channel; number of channel levels; marketing channels for different farm products; Integration, efficiency, costs and price spread: Meaning, definition and types of market integration; marketing efficiency; marketing costs, margins and price spread; factors affecting cost of marketing; reasons for higher marketing costs of farm commodities; ways of reducing marketing costs; Role of Govt. in agricultural marketing: Public sector institutions-CWC, SWC, FCI, CACP & DMI – their objectives and functions; cooperative marketing in India; Risk in marketing: Types of risk in marketing; speculation & hedging; an overview of futures trading;

**Agricultural prices and policy:** Meaning and functions of price; administered prices; need for agricultural price policy; Trade: Concept of International Trade and its need, theories of absolute and comparative advantage. Present status and prospects of international trade in agri-commodities; GATT and WTO; Agreement on Agriculture (AoA) and its implications on Indian agriculture; IPR.

### **Practical**

Plotting and study of demand and supply curves and calculation of elasticities; Study of relationship between market arrivals and prices of some selected commodities; Computation of marketable and marketed surplus of important commodities; Study of price behaviour over time for some selected commodities; Construction of index numbers; Visit to a local market to study various marketing functions performed by different agencies, identification of marketing channels for selected commodity, collection of data regarding marketing costs, margins and price spread and presentation of report in the class; Visit to market institutions – NAFED, SWC, CWC, cooperative marketing society, etc. to study their organization and functioning; Application of principles of comparative advantage of international trade.

### **Fifth Semester: B.Sc. (Ag.) Hons**

**AEC 307: Farm Management, Production and Resource Economics Credits: 2(1+1)**

#### **Theory**

Meaning and concept of farm management, objectives and relationship with other sciences. Meaning and definition of farms, its types and characteristics, factor determining types and size of farms. Principles of farm management: concept of production function and its type, use of production function in decision-making on a farm, factor-product, factor-factor and product-product relationship, law of equi-marginal/or principles of opportunity cost and law of comparative advantage. Meaning and concept of cost, types of costs and their interrelationship, importance of

cost in managing farm business and estimation of gross farm income, net farm income, family labor income and farm business income. Farm business analysis: meaning and concept of farm income and profitability, technical and economic efficiency measures in crop and livestock enterprises. Importance of farm records and accounts in managing a farm, various types of farm records needed to maintain on farm, farm inventory, balance sheet, profit and loss accounts. Meaning and importance of farm planning and budgeting, partial and complete budgeting, steps in farm planning and budgeting-linear programming, appraisal of farm resources, selection of crops and livestock's enterprises. Concept of risk and uncertainty occurs in agriculture production, nature and sources of risks and its management strategies, Crop/livestock/machinery insurance – weather based crop insurance, features, determinants of compensation. Concepts of resource economics, differences between NRE and agricultural economics, unique properties of natural resources. Positive and negative externalities in agriculture, Inefficiency and welfare loss, solutions, Important issues in economics and management of common property resources of land, water, pasture and forest resources etc.

### **Practical**

Preparation of farm layout. Determination of cost of fencing of a farm. Computation of depreciation cost of farm assets. Application of equi-marginal returns/opportunity cost principle in allocation of farm resources. Determination of most profitable level of inputs use in a farm production process. Determination of least cost combination of inputs. Selection of most profitable enterprise combination. Application of cost principles including CACP concepts in the estimation of cost of crop and livestock enterprises. Preparation of farm plan and budget, farm records and accounts and profit & loss accounts. Collection and analysis of data on various resources in India.

**AEC 264: Agribusiness Management (Fourth Semester Elective) Credit: 3 (2+1)**

### **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, retail 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.

### **Elective for the Department of Agricultural Economics (Sixth Semester)**

#### **AEC 364 : Agricultural Policy Analysis in -Elective Credits: 3 (2+1)**

**Agricultural Policy**-major challenges in Indian agriculture-national agricultural policy-food & nutritional security- human development-transfer of technology-capacity building-input management-incentives for agriculture-investment for agriculture-institutional structure-risk management- management reforms.

**Land policies**- reforms-objectives-importance in India-land holdings- systems of ownership-private-large and small holdings-collective & communal ownership-farm tenancy-land tenure & tenancy reforms-ceilings-consequences & implications of land reforms. Land lease and mortgages Acts- registration- terms of lease- right to renewal- lease registration- transfer systems.

**Contract farming**- rationality in India- benefits-issues- framework of contract farming-centralized model-nucleus model-multipartite model-informal model-intermediary model—issues in agreements-legal considerations & enforcements-acts-APMC & contract farming- case studies in India.

**Protocols of organic farming** -concepts- principles-food quality & safety-economics--NSOP-

standards & certification procedures-permitted and non- permitted inputs-organic logo.

**Crop insurance-** history-type-agricultural insurance companies-experimental crop insurance-comprehensive crop insurance-role of various agencies- crop insurance products- problems in insurance- global picture.

**Cooperative laws-** types- formations & registrations- first meeting- amendment of bye-laws-membership privileges & duties- -property & funds-audit, inquiry inspection & supervision – act of multistate societies.

**WTO TRIPS law-** functions-principles –agreements-agriculture -sanitary and phytosanitary measures-anti-dumping, subsidies, safeguards –contingencies and Indian economy-IPR WIPO and Indian protection systems.

**Variety protection and Farmers’ right-** needs- consequences in economy- breeders’ rights-public interests-licensing- international frameworks-condition of registrations—benefit sharing-certification and business.

**Bio-security norms and laws-**challenges—international organizations-legal dimensions- Cartagena protocol &diversity act.

**Banking law & RBI act-** internet banking –fraud & information technology act.

**Wild life protection act and environmental laws-**conservation & community reserves-tourism & poaching action plan- forest laws- rights duties and forensic- constitutional provisions of environment-mandatory models-The India model- air water & international issues.

**Practical:** Estimation of human development index, Identification of risk in local agricultural systems, estimation of mortgages- case study on contract farming - farmers perception of organic farming, economics of traditional & organic farming- consumers approaches on organic products, assessment of risk and insurance in agriculture, estimation of seed replacement rates for principle crops, institutional arrangements of pesticides and insecticides in agriculture, estimation of active ingredient (*ai*) applications in major cereals and vegetables, recording of information on enactment of agricultural & allied laws in judiciary systems.

### **Department of Agricultural Economics**

#### **(Courses of Under Graduate for Horticulture Faculty)**

##### **Second Semester B.Sc. (Hort.) Hons**

###### **AEC 160 Introductory Economics Credits:**

**2 (2+0)**

**Economics:** Meaning, scope and subject matter, definitions, activities, approaches to economic analysis; micro and macro economics, positive and normative analysis. Nature of economic theory; rationality assumption, concept of equilibrium, economic laws as generalization of human behavior. Basic concepts: Goods and services, desire, want, demand, utility, cost and price, wealth, capital, income and welfare.

**Importance of Economics in Horticulture:**Characteristics of agriculture and horticulture, importance and its role in economic development. Agricultural and Horticultural planning for

development of the country.

**Demand:** meaning, law of demand, demand schedule and demand curve, determinants, utility theory; law of diminishing marginal utility, equi-marginal utility principle. Consumer's equilibrium and derivation of demand curve, concept of consumer surplus. Elasticity of demand: concept and measurement of price elasticity, income elasticity and cross elasticity. Production: process, creation of utility, factors of production, input output relationship.

**Laws of returns:** Law of variable proportions and law of returns to scale.

**Cost:** Cost concepts, short run and long run cost curves. Supply: Stock v/s supply, law of supply, supply schedule, supply curve, determinants of supply, elasticity of supply.

**Market structure:** meaning and types of market, basic features of perfectly competitive and imperfect markets. Price determination under perfect competition; short run and long run equilibrium of firm and industry, shut down and break even points.

**Distribution theory:** meaning, factor market and pricing of factors of production. Concepts of rent, wage, interest and profit.

**National income:** Meaning and importance, circular flow, concepts of national income accounting and approaches to measurement, difficulties in measurement.

**Population:** Importance, Malthusian and Optimum population theories, natural and socio-economic determinants, current policies and programmes on population control.

**Money:** Barter system of exchange and its problems, evolution, meaning and functions of money, classification of money, money supply, general price index, inflation and deflation.

**Banking:** Role in modern economy, types of banks, functions of commercial and central bank, credit creation policy. Agricultural and public finance: meaning, micro v/s macro finance, need for agricultural finance,

**Tax:** Public revenue and public expenditure meaning, direct and indirect taxes, agricultural taxation, VAT.

**Economic systems:** Concepts of economy and its functions, important features of capitalistic, socialistic and mixed economies, elements of economic planning.

### **AEC 358: Horti-Business Management (Sixth Semester) Credits: 3 (2+1) ( NEW)**

**Farm management** - definition, nature, characteristics and scope. Farm management principles and decision making, production function, technical relationships, cost concepts, curves and functions – factors, product, relationship – factors relationship, product relationship, optimum conditions, principles of opportunity cost-equi-marginal returns and comparative advantages, time value of money, economic of scale, returns to scale, cost of cultivation and production, break even analysis, decision making under risk and uncertainty.

**Farming systems and types.** Planning – meaning, steps and methods of planning, types of plan, characteristics of effective plans.

**Business Organizations**—forms of business organizations, organizational principles, division of labour. Unity of command, scalar pattern, job design, span of control responsibility, power authority and accountability. Direction – guiding, leading, motivating, supervising, coordination – meaning, types and methods of controlling – evaluation, control systems and devices. Budgeting as a tool for planning and control. Record keeping as a tool of control.

**Functional areas of management**—operations management— physical facilities, implementing the



plan, scheduling the work, controlling production in terms of quantity and quality. Materials management – types of inventories, inventory costs, managing the inventories, economic order quantity (EOQ). Personnel management– recruitment, selection and training, job specialization. **Marketing-** definition– Marketing Process– Need for marketing– Role of marketing- Marketing functions –Classification of markets – Marketing of various channels – Price spread – Marketing Efficiency – Integration – Constraints in marketing of agricultural produce. Market intelligence **Marketing management** – definitions, planning the marketing programmes, marketing mix and four P's. Financial management– financial statements and ratios, capital budgeting. Project management – project preparation evaluation measures.

#### **Practical**

Determination of least cost combination of inputs. Selection of most profitable enterprise combination. Techno-economic parameters for preparation of projects. Preparation of Bankable projects for various agricultural products and its value added products. Identification of marketing channel– Calculation of Price Spread – Identification of Market Structure – Visit to different Markets.

### **AEC 121 : Entrepreneurship Development and Business Management 3 (2+1)**

#### **Theory**

**Entrepreneurship, management** – Management functions – planning- Organizing -Directing – motivation – ordering – leading – supervision-Communication and control.

**Capital & Financial management** – importance of financial statements – balance sheet – profit and loss statement, Analysis of financial statements – liquidity ratios – leverage ratios, Coverage ratios – turnover ratios – profitability ratios.

**Agro-based industries** – Project – project cycle – Project appraisal and evaluation techniques – undiscounted measures – payback period – proceeds per rupee of outlay, Discounted measures – Net Present Value (NPV) – Benefit-Cost Ratio (BCR) – Internal Rate of Return (IRR) – Net benefit investment ratio (N / K ratio) – sensitivity analysis-Importance of agribusiness in Indian economy International trade-WTO agreements – Provisions related to agreements in agricultural and food commodities. Agreements on agriculture (AOA) – Domestic supply, market access, export subsidies agreements on sanitary and phytosanitary (SPS) measures, Trade related intellectual property rights (TRIPS).

**Development (ED):** Concept of entrepreneur and entrepreneurship Assessing overall business environment in Indian economy– Entrepreneurial and managerial characteristics- Entrepreneurship development Programmes (EDP)- Generation incubation and commercialization of ideas and innovations- Motivation and entrepreneurship development- Globalization and the emerging business entrepreneurial environment- Managing an enterprise: Importance of planning, budgeting,

monitoring evaluation and follow-up managing competition. Role of ED in economic development of a country- Overview of Indian social, political systems and their implications for decision making by individual entrepreneurs- Economic system and its implications for decision making by individual entrepreneurs- Social responsibility of business. **Morals and ethics in enterprise management**- SWOT analysis- Government schemes and incentives for promotion of entrepreneurship. Government policy on small and medium enterprises (SMEs)/SSIs/MSME sectors- Venture capital (VC), contract farming (CF) and joint ventures (JV), public-private partnerships (PPP) - Overview of agricultural engineering industry, characteristics of Indian farm machinery industry.

### **Practical**

Preparation of business – Strengths Weaknesses Opportunities and Threats (SWOT) analysis, Analysis of financial statements (Balance Sheet, Profit loss statement). Compounding and discounting, Break-even analysis Visit to agro-based industries – I, Visit to agro-based industries – II Study of Agro-industries Development Corporation , Ratio analysis – I, Ratio analysis – II, Application of project appraisal technique – I(Undiscounted measures), Application of project appraisal technique – II(Discounted Measures), Formulation of project feasibility reports – Farm Machinery Project proposals as entrepreneur – individual and group - Presentation of project proposals in the class.