

Department of Agricultural Economics

M.Sc.(Ag.) Programme

<i>Course No.</i>	<i>Title of the course</i>	<i>Credits</i>
1st Semester		
AG ECON 501	Micro Economics Theory and Applications	2+0
AG ECON 502	Macro Economics and Policy	2+0
AG ECON 503	Evolution of Economic Thought	2+0
AG ECON 504	Agricultural Production Economics	2+1
AG ECON 505	Agricultural Marketing and Price Analysis	2+1
AG ECON 506	Institutional Economics	1+0
AG ECON 507	Intellectual Property Management	1+0
2nd Semester		
AG ECON 551	Research methodology for Social Sciences	2+1
AG ECON 552	Econometrics	2+1
AG ECON 553	Linear Programming	2+1
AG ECON 554	Agricultural Finance and Project Management	2+1
AG ECON 555	Agricultural Development Policy Analysis	2+0
AG ECON 556	Human Resource Development and Management	1+1
3rd Semester		
AG ECON 601	Natural Resource and Environmental Economics	1+1
AG ECON 602	International Economics	1+1
AG ECON 603	Rural marketing	2+0
AG ECON 604	Commodity Futures Trading	2+0
AGECON 649	Seminar I	1+0
4th Semester		
AGECON 651	Agribusiness Management	2+1
AGECON 699	Seminar II	1+0
AGECON 700	Master's Research	0+20

Course Contents

AG ECON 501 Micro Economics Theory and Applications

2+0

Theory

UNIT I: Theory of Consumer Behaviour - Cardinal Utility Approach - Ordinal Utility Approach – Income effect and substitution effect – Applications of Indifference curve approach - Revealed Preference Hypothesis – Consumer surplus - Derivation of Demand curve – Elasticity of demand.

UNIT II: Theory of Production - Production functions – Returns to scale and economies of scale – Technical progress – Theory of Costs – Cost curves– Profit maximization and cost minimization – Derivation of supply curve – Law of Supply – Producers' surplus.

UNIT III: Market Equilibrium - Behavior of Firms in Competitive Markets - Perfect Competition- Effect of Taxation and Subsidies on market equilibrium - Monopoly-Monopolistic - Oligopoly- Theory of Factor Markets.

UNIT IV: General Equilibrium Theory - Welfare Economics - Pareto Optimality – Social welfare criteria - Social Welfare functions.

AG ECON 502 Macro Economics and Policy

2+0 .

Theory

UNIT I : Nature and Scope of Macro Economics - Methodology and Keynesian Concepts National Income - Concepts and measurement- Classical theory of Employment and Say's Law-Modern theory of Employment and Effective Demand.

UNIT II : Consumption function- Investment and savings - Concept of Multiplier and Accelerator - Output and Employment - Rate of interest - Classical, Neo classical and Keynesian version- Classical theory Vs Keynesian theory - Unemployment and Full employment.

UNIT III: Money and classical theories of Money and Price - Keynesian theory of money and Friedman Restatement theory of money - Supply of Money - Demand for Money -Inflation: Nature, Effects and control.

UNIT IV : IS & LM frame work - General Equilibrium of product and money markets - Monetary policy - Fiscal policy- Effectiveness of Monetary and Fiscal policy - Central banking.

UNIT V: Business cycles - Balance of Payment - Foreign Exchange Rate determination.

AG ECON 503 Evolution of Economic Thought

2+0

Theory

UNIT 1: Approaches for the study of history of economic thought – Absolutist vs. Relativist approaches – Evolution of Economic Thought vs. Economic History. Ancient economic thought – medieval economic thought – mercantilism – physiocracy – Forerunners of Classical Political Economy.

UNIT II : Development of Classical Thoughts (Adam Smith, Robert Malthus and David Ricardo) – Critics of Classical Thoughts- Socialist critics – Socialist and Marxian Economic Ideas – Austrian School of Thought – Origins of Formal Microeconomic Analysis – William Stanley Jevons, Cournot and Dupuit.

UNIT III : The birth of neoclassical economic thought – Marshall and Walras – General Equilibrium Theory - Welfare Theory – Keynesian economics.

UNIT IV: The Era of globalization – Experiences of developing world - Rigidity of the past vs. emerging realism – The changing path of international Institutions to economic growth and development approaches.

UNIT V: Economic Thought in India – Naoroji and Gokhale – Gandhian Economics - Economic thought of independent India – Nehru’s economic philosophy - Experiences of the Structural adjustment programmes of the post liberalization era.

AG ECON 504 Agricultural Production Economics

2+1

Theory

UNIT I : Nature, scope and significance of agricultural production economics - Agricultural Production processes, character and dimensions-spatial, temporal - Centrality of production functions, assumptions of production functions, commonly used forms - Properties, limitations, specification, estimation and interpretation of commonly used production functions.

UNIT II : Factors of production, classification, interdependence, and factor substitution - Determination of optimal levels of production and factor application - Optimal factor combination and least cost combination of production - Theory of product choice; selection of optimal product combination.

UNIT III: Cost functions and cost curves, components, and cost minimization -Duality theory – cost and production functions and its applications -Derivation of firm’s input demand and output supply functions -Economies and diseconomies of scale. UNIT IV

Technology in agricultural production, nature and effects and measurement - Measuring efficiency in agricultural production; technical, allocative and economic efficiencies - Yield gap analysis-concepts-types and measurement - Nature and sources of risk, modeling and coping strategies.

Practical

Different forms of production functions - specification, estimation and interpretation of production functions – returns to scale, factor shares, elasticity of production - physical optima -economic optima-least cost combination- optimal product choice- cost function estimation, interpretation-estimation of yield gap - incorporation of technology in production functions- measuring returns to scale-risk analysis through linear programming.

AG ECON 505 Agricultural Marketing and Price Analysis

2+1

UNIT I : Review of Concepts in Agricultural Marketing - Characteristic of Agricultural product and Production – Problems in Agricultural Marketing from Demand and Supply and Institutions sides. Market intermediaries and their role - Need for regulation in the present context - Marketable & Marketed surplus estimation. Marketing Efficiency - Structure Conduct and Performance analysis - Vertical and Horizontal integration - Integration over space, time and form-Vertical co-ordination.

UNIT II : Marketing Co-operatives – APMC Regulated Markets - Direct marketing, Contract farming and Retailing - Supply Chain Management - State trading, Warehousing and other Government agencies -Performance and Strategies - Market infrastructure needs, performance and Government role - Value Chain Finance.

UNIT III : Role of Information Technology and telecommunication in marketing of agricultural commodities - Market research-Market information service - electronic auctions (e-bay), e-Chaupals, Agmarket and Domestic and Export market Intelligence Cell (DEMIC) – Market extension.

UNIT IV: Spatial and temporal price relationship – price forecasting – time series analysis – time series models – spectral analysis. Price policy and economic development – non-price instruments.

UNIT V : Theory of storage - Introduction to Commodities markets and future trading - Basics of commodity futures - Operation Mechanism of Commodity markets – Price discovery - Hedging and Basis - Fundamental analysis - Technical Analysis - Role of Government in promoting commodity trading and regulatory measures.

Practical

Supply and demand elasticities in relation to problems in agricultural marketing. Price spread and marketing efficiency analysis. Marketing structure analysis through concentration ratios. Performance analysis of Regulated market and marketing societies. Analysis on contract farming and supply chain management of different agricultural commodities, milk and poultry products. Chain Analysis - quantitative estimation of supply chain efficiency - Market Intelligence – Characters, Accessibility, and Availability Price forecasting. Online searches for market information sources and interpretation of market intelligence reports – commodity outlook - Technical Analysis for important agricultural commodities - Fundamental Analysis for important agricultural commodities - Presentation of the survey results and wrap-up discussion.

AG ECON 506 Institutional Economics

1+0

UNIT I: Old and New Institutional Economics - Institutional Economics Vs Neo- classical Economics. Definition of institutions – Distinction between institutions and organizations - Institutional evolution

UNIT II: Institutional change and economic performance - national and international economic institutions. Transaction cost economics – Transaction costs and the allocation of resources. Transaction costs and efficiency. Asymmetric information - Moral hazard and Principal-Agent problem.

UNIT III: Free rider problem – path dependency – Interlinked transactions. Collective action and the elimination of free -rider problem - The logic of collective action and its role in reducing free rider problem – theory of Groups. Rent seeking – interest groups and policy formulation.

UNIT IV: Economic analysis of property rights- property rights regimes – private property – State Property - Common property Resources (CPRs) – public goods and club goods.

UNIT V: Special features of institutional arrangements in agriculture – Transaction costs in agriculture - Case Studies - Theories of agrarian institutions - tenancy institutions.

AG ECON 507 Intellectual Property Management

1+0

Theory

UNIT I : World Trade Organization- Agreement on Agriculture (AoA) and Intellectual Property Rights (IPR) - Importance of Intellectual Property Management - IPR and Economic growth- IPR and Bio diversity -Major areas of concern in Intellectual Property Management -Technology Transfer and Commercialization-Forms of different Intellectual Properties generated by agricultural research.

UNIT II: Discovery *versus* Invention - Patentability of Biological Inventions - Method of Agriculture and Horticulture- procedure for patent protection: Preparatory work. Record keeping, writing a patent document, filing the patent document -Types of patent application-patent application under the Patent cooperation treaty (PCT).

UNIT III: Plant genetic resources -Importance and conservation - Sui Generic System -Plant Varieties Protection and Farmers Rights Act- Registration of Extant varieties - Registration and protection of New Varieties / Hybrids / Essentially Derived Varieties - Dispute prevention and settlement -Farmers' Rights.

UNIT IV: Trademark- Geographical Indications of Goods and Commodities – Copy rights-Designs – Biodiversity Protection.

UNIT V: Procedures for commercialization of technology - Valuation, Costs and Pricing of Technology- Licensing and implementation of Intellectual Properties-Procedures for commercialization – Exclusive and non exclusive marketing rights-Research Exemption and benefit sharing .

AG ECON 551 Research Methodology for Social Sciences

2+1

Theory

UNIT I: Importance and scope of research in agricultural economics. Types of research - Fundamental vs. Applied. Concept of researchable problem – research prioritization – selection of research problem. Approach to research – research process.

UNIT II: Hypothesis – meaning - characteristics - types of hypothesis – review of literature – setting of Course Objective and hypotheses - testing of hypothesis.

UNIT III: Sampling theory and sampling design – sampling error - methods of sampling – probability and non-probability sampling methods - criteria to choose. Project proposals – contents and scope – different types of projects to meet different needs – trade-off between scope and cost of the study. Research design and techniques – Types of research design.

UNIT IV: Data collection – assessment of data needs – sources of data collection – discussion of different situations. Mailed questionnaire and interview schedule – structured, unstructured, open ended and closed-ended questions. Scaling Techniques. Preparation of schedule – problems in measurement of variables in agriculture. Interviewing techniques and field problems - methods of conducting survey – Reconnaissance survey and Pre testing.

UNIT V: Coding editing – tabulation – validation of data. Tools of analysis – data processing. Interpretation of results – Preparing research report / thesis – Universal procedures for preparation of bibliography – writing of research articles.

Practical

Exercises in problem identification. Project proposals – contents and scope. Formulation of Objective and hypotheses. Assessment of data needs – sources of data – methods of collection of data. Methods of sampling – criteria to choose – discussion on sampling under different situations.

Scaling Techniques – measurement of scales. Preparation of interview schedule - Field testing. Method of conducting survey. Exercise on coding, editing, tabulation and validation of data. Preparing for data entry into computer. Hypothesis testing – Parametric and Non-Parametric Tests. Exercises on format for Thesis / Report writing. Presentation of the results.

AG ECON 552 Econometrics

2+1

Theory

UNIT I: Introduction – relationship between economic theory, mathematical economics, models and econometrics, methodology of econometrics-regression analysis.

UNIT II Basic two variable regression - assumptions estimation and interpretation-approaches to estimation - OLS, MLE and their properties - extensions to multi variable models-multiple regression estimation and interpretation.

UNIT III: Violation of assumptions – identification, consequences and remedies for Multicollinearity, heteroscedasticity, autocorrelation – data problems and remedial approaches - model misspecification.

UNIT IV: Use of dummy variables-limited dependent variables – specification, estimation and interpretation.

UNIT V: Simultaneous equation models – structural equations - reduced form equations - identification and approaches to estimation.

Practical

Single equation two variable model specification and estimation - hypothesis testing-transformations of functional forms and OLS application-estimation of multiple regression model - hypothesis testing - testing and correcting specification errors - testing and managing Multicollinearity - testing and managing heteroscedasticity - testing and managing autocorrelation - estimation of regressions with dummy variables - estimation of regression with limited dependent variable - identification of equations in simultaneous equation systems.

AG ECON 553 Linear Programming

2+1

Theory

UNIT I: Decision Making- Concepts of decision making, introduction to quantitative tools, introduction to linear programming, uses of LP in different fields, graphic solution to problems, formulation of problems.

UNIT II: Simplex Method: Concept of simplex Method, solving profit maximization and cost minimizations problems. Formulation of farm and non farm problems as linear programming models and solutions.

UNIT III: Extension of Linear Programming models: Variable resource and price programming, transportation problems, recursive programming, dynamic programming.

UNIT IV: Game Theory- Concepts of game theory, two person constant sum, zero sum game, saddle point, solution to mixed strategies, the rectangular game as Linear Programme.

Practical

Graphical and algebraic formulation of linear programming models. Solving of maximization and minimization problems by simplex method. Formulation of the simplex matrices for typical farm situations.

AG ECON: 554 Agricultural Finance and Project Management

2+1

Theory

UNIT I:

Role and Importance of Agricultural Finance. Financial Institutions and credit flow to rural/priority sector. Agricultural lending – Direct and Indirect Financing - Financing through Co-operatives, NABARD and Commercial Banks and RRBs. District Credit Plan and lending to agriculture/priority sector. Micro-Financing and Role of MFI's - NGO's, and SHG's.

UNIT II:

Lending to farmers – The concept of 3 C's, 7 P's and 3 R's of credit. Estimation of Technical feasibility, Economic viability and repaying capacity of borrowers and appraisal of credit proposals. Understanding lenders and developing better working relationship and supervisory credit system. Credit inclusions – credit widening and credit deepening.

UNIT III:

Financial Decisions – Investment, Financing, Liquidity and Solvency. Preparation of financial statements - Balance Sheet, Cash Flow Statement and Profit and Loss Account. Ratio Analysis and Assessing the performance of farm/firm.

UNIT IV:

Project Approach in financing agriculture. Financial, economic and environmental appraisal of investment projects. Identification, preparation, appraisal, financing and implementation of projects. Project Appraisal techniques – Undiscounted measures. Time value of money – Use of discounted measures - B-C ratio, NPV and IRR. Agreements, supervision, monitoring and evaluation phases in appraising agricultural investment projects. Net work Techniques – PERT and CPM.

UNIT V:

Risks in financing agriculture. Risk management strategies and coping mechanism. Crop Insurance programmes – review of different crop insurance schemes - yield loss and weather based insurance and their applications.

Practical

Development of Rural Institutional Lending - Branch expansion, demand and supply of institutional agricultural credit and Over dues and Loan waiving- : An overview, Rural Lending Programmes of Commercial Banks, Lead Bank Scheme-Preparation of District Credit Plan, Rural Lending Programmes of Co-operative Lending Institutions, Preparation of financial statements using farm/firm level data, Farm credit appraisal techniques and farm financial analysis through financial

statements, Performance of Micro Financing Institutions - NGO's and Self-Help Groups, Identification and formulation of investment projects, Project appraisal techniques – Undiscounted Measures and their limitations. Project appraisal techniques – Discounted Measures, Network techniques – PERT and CPM for project management, Case Study Analysis of an Agricultural project,

Financial Risk and risk management strategies – crop insurance schemes, Financial instruments and methods – E banking, Kisan Cards and core banking.

AG ECON 555: Agricultural Development Policy Analysis

2+0

Theory

UNIT I:

Development Economics – Scope and Importance - Economic development and economic growth - divergence in concept and approach - Indicators and Measurement of Economic Development – GNP as a measure of economic growth

– New Measures of Welfare – NEW and MEW – PQLI – HDI – Green GNP - Criteria for under development – Obstacles to economic development – Economic and Non-Economic factors of economic growth.

UNIT II:

Economic development – meaning, stages of economic development, determinants of economic growth. Theories of economic growth – Ricardian growth model – The Harrod – Domar Model – The Neo classical Model of Growth – The Kaldor Model – Optimal Economic Growth – Recent Experiences of developing country economies in transition – Role of state in economic development – Government measures to promote economic development. Introduction to development planning.

UNIT III:

Role of agriculture in economic / rural development – theories of agricultural development – Population and food supply - need for sound agricultural policies – resource policies – credit policies – input and product marketing policies – price policies.

UNIT IV:

Development issues, poverty, inequality, unemployment and environmental degradation – Models of Agricultural Development – Induced Innovation Model - policy options for sustainable agricultural development.

UNIT V:

Globalization and the relevance of development policy analysis – The dilemma of free trade? – Free trade versus Protectionism- Arguments for protection. Arguments against protection. Role of protection in Developing Countries. WTO – Agreement on Agriculture - Contradictions of free trade - proponents and opponents policies in vulnerable sectors like agriculture – Lessons for developing countries.

AGECON 556 Human Resource Development & Management

1+1

UNIT I:

Introduction to human Resources Management. Human resources Planning- Nature and Significance, Job Analysis. Job Description . Job specification. Job enlargement. Job enrichment. Job rotation. Job evaluation.

UNIT II:

Recruitment and Selection Process. Induction. Training and Human resources. Development Nature. Significance. Process and Techniques. Internal mobility including Transfers. Promotions. employee separation.

UNIT III:

Performance Appraisal - Significance and methods. Compensation management. Wages and salary administration – Course Objective: Wage Fixation: Fringe benefits. Incentive Payment. Bonus and Profit Sharing.

UNIT IV:

Industrial Relations- Role and Status of Trade Unions: Collective Bargaining: Worker's Participation in Management. Career planning and employee retention.

UNIT V:

Quality of work life- employee welfare measure. Disputes and grievance Handling Procedures: Arbitration and Adjudication: Health and Safety of Human Resources: Human resources accounting .Human resources outsourcing.

Practical:

Case studies of above mentioned topics

AG ECON 601 Natural Resource and Environment Economics

1+1

Theory

UNIT I:

Concepts, Classification and Problems of Natural Resource Economics – Economy - Environment interaction – The Material Balance principle, Entropy law-Resources Scarcity - Limits to Growth - Measuring and mitigating natural resource scarcity – Malthusian and Ricardian scarcity – scarcity indices - Resource Scarcity and Technical Change.

UNIT II:

Theory of optimal extraction renewable resources –economic models of oil extraction- efficiency - time path of prices and extraction - Hotelling’s rule, Solow-Harwick’s Rule. Theory of optimal extraction exhaustible resources – economic models of forestry and fishery.

UNIT III:

Efficiency and markets – market failures - externalities – types - property rights – transaction costs – Coase's theorem and its critique - public goods - common property and open access resource management - Collective action.

UNIT IV:

Environmental perspectives - biocentrism, sustainability, anthropocentrism - Environmental problems and quality of environment - Sources and types of pollution -air, water, solid waste, land degradation – environmental and economic impacts - Economics of pollution control - efficient reduction in environmental pollution.

UNIT V:

Environmental regulation – economic instruments - pollution charges - Pigovian tax - tradable permits – indirect instruments - environmental legislations in India.

UNIT VI

Concept of sustainable development - Economic Perspective - Indicators of sustainability Relation between development and environment stress-Environmental Kuznet's curve Environmental Accounting – resource accounting methods - International Environmental Issues – climate change – likely impacts - mitigation efforts and international treaties.

Practical

Exhaustible resource management –optimum rate of oil extraction. Renewable resource management – optimum harvest of Forestry/fishery. Exercise on pollution abatement –I. Exercise on pollution abatement –II. Concepts in valuing the environment. Taxonomy of valuation techniques. Productivity change method – substitute cost method - Hedonic price method - Travel cost method -Contingent valuation methods. Discount rate in natural resource management. Environment impact assessment Visit to Pollution Control Board.

AG ECON 602 International Economics

1+1

Theory

UNIT I:

Scope and Significance of International Economics - The role of trade- General Equilibrium in a Closed Economy (Autarky Equilibrium) – Equilibrium in a Simple Open Economy - Possibility of World Trade - Trade gains and Trade Equilibrium.

UNIT II :

Tariff, Producer Subsidy, Export Subsidy, Import Quota and Export Voluntary Restraints- The Case of Small Country and Large Country Case.

UNIT III :

Ricardian Model of Trade- Specific Factors Model- Heckscher - Ohlin Model - Trade Creation and Trade Diversion – Offer Curve - Export Supply Elasticity and Import Demand Elasticity - Comparative Advantage and Absolute Advantage.

UNIT IV:

Official Exchange Rate and Shadow Exchange Rate - Walra’s Law and Terms of Trade – Trade Blocks.

UNIT V :

IMF, World Bank, IDA, IFC, ADB – International Trade agreements – Uruguay Round – GATT – WTO.

Practical

Producer's Surplus, Consumer's Surplus, National Welfare under Autarky and Free Trade Equilibrium with small and large country assumption- Estimation of Trade Gains- Estimation of competitive and comparative measures like NPC, EPC, ERP and DRC- Estimation of Offer Curve Elasticity- Estimation of Effect of Tariff, Export Subsidy, Producer Subsidy, Import Quota and Export Voluntary Restraints on National Welfare- Estimation of Ricardian Model - Estimation of Effect of Trade under Specific Factor Model- Estimation of trade Equilibrium under Heckscher -Ohlin model - Trade Creation and Diversion.

AG ECON 603 Rural Marketing

2+0

Theory

UNIT I:

Concept and scope of rural marketing, nature and characteristics of rural markets, potential of rural markets in India.

UNIT II:

Environmental factors - socio-cultural, economic and other environmental factors affecting rural marketing.

UNIT III:

Rural consumer's behaviour - behavior of rural consumers and farmers; buyer characteristics and buying behaviour; Rural v/s urban markets.

UNIT IV:

Rural marketing strategy - Marketing of consumer durable and non-durable goods and services in the rural markets with special reference to product planning; product mix, pricing Course Objective, pricing policy and pricing strategy.

UNIT V:

Product promotion - Media planning, planning of distribution channels, and organizing personal selling in rural market in India.

AG ECON 651

Agribusiness Management

2+1

UNIT I:

Definition concepts and genesis of Agribusiness, -distinguishing features-challenges-scope of agribusiness-agribusiness activities-functional management-economics-enterprises-market analysis-technical analysis-financial & economic analysis.

UNIT II:

Production Management-systems-specialization & diversification: traditional & new avenues-bio based.Natural resource management:land, soil & water-irrigation and sustainable agriculture.

UNIT III:

Input Management: agricultural inputs & availability-fertilizers, water & irrigation, seeds –policy-private public sector-demand & supply regulations, plant protection chemicals-integrated systems & regulatory management, credit & infrastructures & mechanisations.

UNIT IV:

Marketing Management & Government intervention-Direct marketing,contract farming, price analysis & exchange-demand & supply, strategies, information systems.

UNIT V:

Supply Chain Management-vertical-horizontal-logestic service providers-supply chain categories-supply net works-contract farming-advantages-facrors of supply chains-information managements —ICT-e-commerce, Government innitiatives-farmers portal –risk management.

UNIT VI: Institutional linkages: International linkagesto agriculture, Academic & financil linkages, public & private linkages.

Practical:

Case studies of above mentioned topics.