



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Agriculture
Ph.D. (Ag.) Agricultural Economics, II semester

PHDAEC602: Advanced Macro economic analysis

Course code	Course Name	TEACHING & EVALUATION SCHEME							
		THEORY			PRACTICAL		T	P	CREDITS
		END SEM University Exam	Mid Term Exam	Teachers Assessment*	END SEM University Exam	Teacher' s Assessment*			
PHDAEC602	Advanced Macro economic analysis	60	00	40	00	0	2	0	2

Legends: T- Theory; P – Practical;

*Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class.

Objectives:

To understand the functioning of national economy, its history and models. The policies governing the modern economic system and concerned institutions.

Theory:

UNIT I: Overview

Conceptual framework - Classical, Keynesian, Neo-Classical, and Neo-Keynesian macroeconomics; Review of Keynes-Classical Synthesis; Aggregate Demand and Supply in the closed economy with fixed and variable price level- determination of wage, prices, output and employment.

UNIT II: Economic Models: Open Economy Models

Exchange rate determination; purchasing power parity; asset market approach; Short-run open economy models; Mundell-Fleming model- exchange rate regime: perfect capital mobility under fixed and flexible exchange rate; effectiveness of fiscal policy and monetary policy; Dornbusch's overshooting model; monetary approach to balance of payments; international financial markets

UNIT III: Economic Models: Dynamic Macroeconomic Models

Introduction to dynamic macroeconomic Models; Dynamic aggregate demand and supply - short and long term equilibrium- rational expectations appro

UNIT IV: Business Cycles

Business cycle and its alternative equilibrium model, Stability analysis Economics of Great Events Depression, hyperinflation and Deficits. Advances in Business Cycle Theory; Real Business Cycles & Neo-Keynesian Economics

UNIT V: Macroeconomic Polices

Macroeconomic Polices Monetary policy - Design of Monetary Policy; Inflation Targeting, Fiscal Policy - Government Budget Constraint: The Arithmetic of Deficits and Debt, Current versus Future Taxes, the Evolution of Debt-to-GDP Ratio; Public Borrowing-Internal and external aid, Deficit financing, Development Financing; BOP & Adjustment Policies - Foreign Exchange Policy -International macro-economic policies, IMF, IBRD, UNCTAD.

Practical

- Problems in consumer utility maximization
- Estimation of income and substitution effects;



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- Estimation and comparison of Consumer's surplus, equivalent variation and compensating variation.
- Estimation of demand models – Derivation and estimation of labour supply equations from household models comparative static analysis in consumption.
- Advanced problem solving in price determination under perfect competition, monopoly, oligopoly and monopolistic competition.
- Game theory models.
- Problems solving in General Equilibrium Theory and Welfare Economics.
- Problems in public goods provision.

Suggested Reading:

Heibroker RL. Understanding Macro Economics.

Mehta JK. Macro Economics. Edgemand MR. Macro-Economics: Theory & Policy.

David' W Pearce. The dictionary of modern Economics.

Allen RGD. 1968. Macro-Economic Theory: A Mathematical Treatment. London: Macmillan.

Stanlake GF. Macro-Economics: An Introduction. Longman, London.

Mithai DM. 1981. Macro-Economics: Analysis and Policy. Oxford and IBH, New Delhi. Hicks JR Critical Essays in Monetary Theory.

Nawiyn WT. Theory of Money.

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PHDAEC 604: Advanced Production Economics (2+1)

Course code	Course Name	TEACHING & EVALUATION SCHEME							
		THEORY			PRACTICAL		T	P	CREDITS
		END SEM University Exam	Mid Term Exam	Teachers Assessment*	END SEM University Exam	Teacher' s Assessment*			
PHDAE C604	Advanced Production Economics	60	00	40	30	20	2	1	3

Legends: T - Theory; P – Practical;

Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class etc.

Objective

The course deals with the concept of advanced production economics. The exposition would be mathematically oriented. The course would also cover the analysis of production functions, its interpretation, decision making with multiple input use, factor sharing and decision making under risk and uncertainty.

Theory:

UNIT I: Production Process

Agricultural Production process - Relationship between farm planning and production economics-scope of agricultural production and planning-methods/ procedures in agro-economic research and planning.

UNIT II: Production Functions and characteristics

Production functions, components, assumptions, properties and their economic interpretation - Concepts of homogeneity, homotheticity,, APP, MPP, elasticities of substitution and their economic relevance - Production relations - optimality Commonly used functional forms, nature, properties, limitations, estimation and interpretation - linear, Spillman - Cobb Douglas, quadratic, multiplicative (power) functional forms - Translog, and transcendental functional forms - CES, production functional forms-Conceptual and empirical issues in specification, estimation and application of production functions- Analytical approaches to economic optimum - Economic optimum - determination of economic optimum with constant and varying input and output prices - Economic optimum with production function analysis - input use behaviour. **UNIT III: Decision Making in Production**

Decision making with multiple inputs and outputs - MRT and product relationship cost of production and adjustment in output prices-single input and multiple product decisions- Multi input, and multi product production decisions - Decision making with no risk -Cost of wrong decisions - Cost curves - Principles and importance of duality theory - Correspondence of production, cost, and profit functions - Principles and derivation of demand and supply functions

UNIT IV: Technology, Efficiency and Risk Management

Technology, input use and factor shares -effect of technology on input use decomposition analysis-factor shares-estimation methods- Economic efficiency in agricultural production - technical, allocative and economic



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efficiency - measurement - Yield gaps analysis - concepts and measurement - Risk and uncertainty in agriculture
 - incorporation of risk and uncertainty in decision making - risk and uncertainty and input use level-risk
 programming.

UNIT V: Programming

Simulation and programming techniques in agricultural production-Multiple Objective Programming (MOP) -
 Goal programming, Weighted sum and Compromise programming - applications.

Practical

- Estimation of different forms of production functions
- Optimal input and product choice from estimated functions
- Derivation of demand and supply functions and estimation-Estimation of cost function and interpretations
- Optimal product and input choice under multi input and output system
- Estimation of factor shares from empirical functions estimated
- Estimating production functions incorporating technology changes: Decomposition analysis and incorporation of technology
- Estimation of efficiency measures - Stochastic, probabilistic and deterministic frontier production functions
- Risk programming - MOTAD-Quadratic programming
- Simulation models for agricultural production decisions
- Goal programming - Weighted, lexicographic and fuzzy goal programming-Compromise programming.

Suggested Reading:

- Baumol WG. 1973. Economic theory and operations analysis. Practice Hall of India Private Limited, New Dehli. 626 p
- Gardner BL and Raussier GC. 2001. Handbook of Agricultural Economics Vol. I Agricultural Production. Elsevier.
- Heady EO. 1952. Economics of Agricultural Production and resource use. Practice Hall of India
- Heady EO and Dillon JL. 1961. Agricultural Production functions. Kalyani Publishers, Ludhiana, India. 667 p.

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PHDAEC 605: Operations Research (2+1)

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PHDAEC605	Operations Research	60	00	40	30	20	2	1	3

Legend: T - Theory; P - Practical;

Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class etc.

Objective

To gain elementary knowledge of solving problems and decision making for managing farming and organisation in resource constraint in order to achieve the objective.

Theory:

NIT I: Concepts

Elementary concepts and objectives of Operations Research, Review of Linear programming Assumptions & Methods, Non-linear programming problem Quadratic programming, Multi Objective Programming (MOP)

NIT II: Inventory- A Review

Inventory control models, costs involved in Inventory management, types of inventory, Economic order quantity model, Waiting line models: Waiting line problem, Characteristics of a waiting line system, Single channel model,

NIT III: Models

Markov Chains, Sequencing, Replacement models, Transportation and Assignment problems.

NIT IV: Decision Making

Decision making under risk and uncertainties, decision problem, maximin criterion, minimax regret criterion, Laplace criterion, Pay off tables, Decision trees. Expected Value of Perfect information

NIT V: Game Theory

Game Theory - Two-person Zero sum game, Simulation, Network Analysis- PERT & CPM.

Practical

- Linear and Non-linear programming problem,
- Quadratic programming, Multi-Objective Programming- Goal Programming,
- Lexicographic, Weighted Sum, Determining economic order quantity, reorder levels of EOQ model.
- Waiting line problem, Problems on Markov Chains, Sequencing and Replacement models.
- Formulating and solving transportation type problems, Assignment problems as a special type of transportation problem.
- Solving deterministic and probabilistic queuing models Structuring and solving decision trees for optimal decisions Game theory, Simulation, Developing network (PERT/CPM) diagrams and determining the critical path.



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Suggested Reading:

- Taha HA. Operations Research: An Introduction.
- Veerabhadrapa H. An Introduction to Operations Research.
- Gupta PK and Hira DS. Operations Research. Sharma R. Operations Research.
- Sharma JK. Operation Research.
- Greene WH. 2002. Econometric Analysis. Pearson Education.
- Johnston J and Dinardo J. 2000. Econometric Methods.
- Mc Graw-Hill. Koutseyianis A. 1997. Theory of Econometrics. Barner & Noble.

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PHDAEC 606: Advanced Agricultural Marketing and Price Analysis (2+1)

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		END SEM University Exam	Mid Term Exam	Teachers Assessment*	END SEM University Exam	Teacher' s Assessment*			
PHDAEC606	Advanced Agricultural Marketing and Price Analysis	60	00	40	30	20	2	1	3

Legends: T - Theory; P – Practical;

Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class etc.

Objective

To impart adequate knowledge and analytical skills in the field of agricultural marketing and enhance expertise in improving the performance of the marketing institutions and the players in marketing of agricultural commodities. Learning outcome: After successful completion of this course, the student will be able to Gain the knowledge of marketing and agricultural prices. Work out the interaction between different markets and analyse their working. Gain expertise in forecasting of price and build up market intelligence.

Theory:

UNIT I: Agricultural Marketing

Insights Importance of market analysis in the agricultural system types of marketing-advantages and disadvantages - quantitative estimation -the distinguishing characteristics and role of agricultural prices -data sources for agricultural products and prices softwares used in market analysis.

UNIT II: Marketing Institutions

Institutions and their functions Role of various formal institutions in agricultural marketing and functions measuring their efficiency - public - private partnership - institutional arrangements. Successful case studies.

UNIT III: Market Dynamics

Multi market estimation, supply response models. Market integration and price transmission supply / value chain management. GAP analysis. Current trends in information in the changing agrifood system.

UNIT IV: Commodity Marketing

Agricultural commodity marketing -spot and futures- marketing of derivatives speculation, hedging, swap, arbitrage etc. commodity exchanges - price discovery and risk management in commodity markets-Regulatory mechanism of futures trading.

UNIT V: Models for Analysis

Lag operators and difference equations; stationary and stochastic processes; Unit roots and cointegration; conditional heteroscedasticity: ARCH and GARCH models -forecast evaluation; methods of forecasting. price indices and econometric estimation and simulation.



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Practical

- Estimation of demand/ supply forecasting,
- Supply chain/ value chain analysis for different commodities
- Commodity models- multi market estimation- time series analysis
- Market integration studies- price discovery price volatility estimation
- Commodity price forecasting using econometric softwares.

Suggested Reading:

- Acharya SS and Agarawal NL. 1994. Agricultural Prices-Analysis and Policy. Oxford and IBH Publishing company Pvt. Ltd, New Delhi.
- Acharya SS and Agarawal NL. 2004. Agricultural Marketing in India. Oxford and IBH Publishing company Pvt. Ltd, New Delhi.
- Kohls RH and Joseph N. Uhl: Marketing of Agricultural products by Collier MacMillan International.
- Rhodes VJ. 1978. The Agricultural Marketing System. Grid Pub. Ohio.

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