MAHATMA GANDHI KASHI VIDYAPEETH VARANASI

COURSE STRUCTURE FOR

M.Sc. (AGRICULTURE)

AGRICULTURAL ECONOMICS & STATISTICS

UNDER SEMESTER SYSTEM TO COME INTO FORCE FROM

ACADEMIC SESSION -2013-14

M.Sc. (AGRICULTURE)

AGRICULTURAL ECONOMICS & STATISTICS

SEMESTER SYSTEM

SEMESTER SYSTEM

M.Sc. (Ag.) AGRICULTURAL ECONOMICS
COURSE STRUCTURE – AT A GLANCE

FIRST SEMESTER   **M.M.: 400**

PAPER – 101 MICRO ECONOMIC THEORY AND APPLICATION   75 MARKS
PAPER – 102 ECONOMIC STRACTURE OF INDIAN AGRICULTURE   75 MARKS
PAPER – 103 INTERNATIONAL ECONOMICS   75 MARKS
PAPER – 104 STATISTICS FOR AGRICULTURAL ECONOMICS   75 MARKS
PRACTICAL   FOR ALL   100 MARKS

SECOND SEMESTER   **M.M.: 400**

PAPER – 201 MACRO ECONOMICS AND POLICY   75 MARKS
PAPER – 202 RURAL MARKETING   75 MARKS
PAPER – 203 RESEARCH METHODOLOGY FOR SOCIAL SCIENCES   75 MARKS
PAPER – 204 AGRICULTURAL MARKETING & PRICE ANALYSIS   75 MARKS
PRACTICAL FOR ALL   100 MARKS

THIRD SEMESTER   **M.M.: 400**

PAPER – 301 NATURAL RESOURCE AND ENVIRONMENTAL ECONOMICS 75 MARKS
PAPER – 302 AGRICULTURAL FINANCE   75 MARKS
PAPER – 303 ECONOMETRICS   75 MARKS
PAPER – 304 FARM BUSINESS MANAGEMENT   75 MARKS
PRACTICAL FOR ALL   100 MARKS

FOURTH SEMESTER   **M.M.: 400**

PAPER – 401 AGRICULTURAL PRODUCTION ECONOMICS   100 MARKS
PAPER – 402 SEMINAR   50 MARKS
PAPER – 403 THESIS WORK FOR RESEARCH   150 MARKS
VIVA-VOCE FOR THESIS WORK FOR RESEARCH   100 MARKS
              OR
PAPER – 403-A SPL. PAPER- AGRICULTURAL CO-OPERATION   75 MARKS
PAPER – 403-B SPL. PAPER- AGRICULTURAL DEVELOPMENT POLICY   75 MARKS
PRACTICAL FOR SPECIAL PAPER   100 MARKS

Consolidate Performa for allotments of all semester:-

First Semester	400
Second Semester	400
Third Semester	400
Fourth Semester	400
Grand Total	**1600**

M. Sc. (Ag.) EXAMINATION AGRICULTURAL ECONOMICS
REGULATIONS

Semesters / Papers	Title of the Papers	**Theory**	**Practical**

		Max. Marks	Mini. Pass Marks	Max. Marks	Mini. Pass Marks
SEMESTER I					
Paper 101	(Theory Paper)	75	23	**-**	**-**
Paper 102	(Theory Paper)	75	23	-	-
Paper 103	(Theory Paper)	75	23	-	-
Paper 104	(Theory Paper)	75	23	-	-
	PRACTICAL FOR ALL	-	-	100	30
Total aggregate pass marks of First Semester is 36%		**Max. Marks – 400, Min. Marks – 144**			
SEMESTER II					
Paper 201	(Theory Paper)	75	23	**-**	**-**
Paper 202	(Theory Paper)	75	23	-	-
Paper 203	(Theory Paper)	75	23	-	-
Paper 204	(Theory Paper)	75	23	-	-
	PRACTICAL FOR ALL	-	-	100	30
Total aggregate pass marks of Second Semester is 36%		**Max. Marks – 400, Min. Marks – 144**			
SEMESTER III					
Paper 301	(Theory Paper)	75	23	**-**	**-**
Paper 302	(Theory Paper)	75	23	-	-
Paper 303	(Theory Paper)	75	23	-	-
Paper 304	(Theory Paper)	75	23	-	-
	PRACTICAL FOR ALL	-	-	100	30
Total aggregate pass marks of Third Semester is 36%		**Max. Marks – 400, Min. Marks – 144**			
SEMESTER IV					
Paper 401	(Theory Paper)	100	30	**-**	**-**
Paper 402	SEMINAR	-	-	50	15
Paper 403	THESIS WORK FOR RESEARCH	150	45	-	-
	VIVA-VOCE FOR THESIS	100	30		
	OR SPECIAL PAPER-I			-	-
Paper 403-A	SPECIAL PAPER-II	75	23	-	-
Paper 403-B		75	23		
	PRACTICAL FOR SPECIAL PAPER	-		100	30
Total aggregate pass marks of Fourth Semester is 36%		**Max. Marks – 400, Min. Marks – 144**			

Consolidate Performa for allotments of all semester are as follows:-

First Semester	400	144
Second Semester	400	144
Third Semester	400	144
Fourth Semester	400	144
Grand Total	**1600 (Max. Marks)**	**576 (Min. Marks)**

Note:

1. The research work may be initiated in any of II or III semester but the thesis shall be submitted at the end of IV semester.

2. The evaluation of seminar presentation shall be done by the departmental committees.

3. Paper setting and evaluation is done 50% internal and 50% external examiner.

COURSE CONTENTS – DETAILED SYLLABUS
M.Sc. (AG.) ARICULTURAL ECONOMICS
FIRST SEMESTER
PAPER – 101 MICRO ECONOMIC THEORY AND APPLICATIONS

MM:75

UNIT- I-
Theory of Consumer Behavior - 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.

PAPER – 102 ECONOMIC STRUCTURE OF INDIAN AGRICULTURE

MM:75

UNIT- I-
Land- Structure of land holding in India, Land tenures and land reforms, Land reforms policy, Irrigation facilities in India.

UNIT- II-
Labour-Man-power planning and agriculture, Unemployment and underemployment in Indian agriculture, agricultural wages and method of wages payment.

UNIT- III-
Capital- Role of capital in agricultural product, Nature and extent of credit needs of the farmers, Agricultural credit agencies and their efficiencies, Problems of agricultural credit.

UNIT- IV-
Organization- Meanings large and small scale farming, Systems and types of farming, Advantages and disadvantages large and small scale farming.

PAPER – 103 INTERNATIONAL ECONOMICS   MM:75
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-
IMF, World Bank, IDA, IFC, ADB – International Trade agreements – Uruguay Round –GATT – WTO.

PAPER-104 STATISTICS FOR AGRICULTURAL ECONOMICS   MM:75
UNIT- I-
Classification, tabulation and graphical representation of data. Box-plot, Descriptive statistics. Exploratory data analysis, measures of central tendency, measures of dispersion, correlation & regression analysis, Theory of probability, random variable, mathematical expectation.
UNIT- II-
Discrete and continuous probability distributions: Binomial, Poisson, Normal distribution, Concept of sampling distribution, Test of significance: chi-square, T, F, and Z tests.
UNIT- III-
Determinants, Matrix algebra: matrix addition, subtraction, and multiplication, some special types of matrices and inverse of matrix, concept of limits and differentiation, some common laws of differentiation, Differentiation of Power and exponential function.
UNIT –IV-
Time series construction and use of Index Number, Interpolation and Extrapolation, Theory of sampling, Random and Stratified sampling.

PRACTICAL   MM:100
Exploratory data analysis, Box-Cox plots; Fitting of distributions ~ Binomial, Poisson, Normal; Large sample tests, testing of hypothesis based on exact sampling distributions – chi- square, 't' test and 'f' test; Correlation and regression analysis.

SECOND SEMESTER

PAPER – 201   MACRO ECONOMICS AND POLICY   MM:75

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.

PAPER – 202   RURAL MARKETING   MM:75

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-

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

PAPER – 203 RESEARCH METHODOLOGY FOR SOCIAL SCIENCES

MM:75

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.

UNIT- IV-

Data collection – assessment of data needs – sources of data collection – Mailed questionnaire and interview schedule – Scaling Techniques Interviewing techniques and field problems - methods of conducting survey – 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.

PAPER – 204 AGRICULTURAL MARKETING AND PRICE ANALYSIS

MM:75

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 - Marketable & Marketed surplus estimation. Marketing Efficiency.

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.

UNIT- III-

Role of Information Technology and telecommunication in marketing of agricultural commodities –Market research-Market information service – electronic auctions (e-bay).

UNIT- IV-

Theory of storage – Introduction to Commodities markets and future trading – Basics of commodity futures – Operation Mechanism of Commodity markets – Price

discovery -Role of Government in promoting commodity trading and regulatory measures.

PRACTICAL   MM:100

Supply and demand elasticity's 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. 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.

THIRD SEMESTER
PAPER – 301   NATURAL RESOURCE AND ENVIRONMENTAL ECONOMICS   MM:75

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 Recardian 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 – Coast's theorem and its critique - public goods – common property and open access resource management - Collective action.

UNIT –IV-

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

PAPER – 302   AGRICULTURAL   FINANCE   MM:75
UNIT- I-

Nature of agricultural finance, Role and importance of agricultural finance, problems of agricultural finance.

UNIT-II-

Finance sources- Sources of agricultural credit, Money lender, Co-operative societies, Land development banks, Regional rural banks, Commercial banks, NABARD, Kissan credit card.

UNIT-III-

Economic principles in agricultural finance- Three 'R's (Return, Re-payment and Risk-bearing), Four 'C's (Characters, Capacity, Capital and Conditions), Five 'P's (Purpose, Person, Productivity planning, Payment of installments and Protection security).

UNIT-IV-

Taxation- Principles and policy of agricultural taxation in India, Tax burden on agriculture, Possibilities agricultural income tax, Land revenue.

PAPER – 303   ECONOMETRICS   MM:75

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 Multi-co linearity, heteroscedasticity, autocorrelation–data problems and remedial approaches – model misspecification.

UNIT- IV-

Use of dummy variables-limited dependent variables – specification, estimation and Interpretation.

PAPER – 304 FARM BUSINESS MANAGEMENT   MM:75

UNIT- I-

Concept and definition of farm business management, Scope and role of farm management in Indian agriculture, Nature and characteristics of Indian farming.

UNIT- II-

Basic principles of farm business management- Principle of comparative advantages, Law of diminishing return, Enterprises combination, Time combination, Equal-marginal return, Substitution, Cost principles.

UNIT- III-

Decision making in Agriculture – Frame work of decision making, Process of decision making, decision making under risk and uncertainty, Decision theory and their application.

UNIT- IV-

Farm planning- its importance and method, Farm planning in India, Complete and partial budgeting, Steps in making farm budget, Farm efficiency and its measures, Farm financial analysis, Measures of farm business and their efficiency.

PRACTICAL   MM:100

Principle of diminishing return, Comparative advantages, Enterprises combination, Cost principles, Equi-marginal return, Substitution, Farm planning and budgeting, Calculate farm efficiency, Preparation of farm records, Farm inventory and measures of labour efficiency.

FOURTH SEMESTER

PAPER – 401 AGRICULTURAL PRODUCTION ECONOMICS   MM:100

UNIT- I-

Nature, scope and significance of agricultural production economics, Agricultural Production economics, Agriculture economics process character and dimension - spatial , temporal - Centrality of production function assumption of production function, Commonly used production functions.

UNIT- II-

The Production Relationship- Factor-product relationship, Three stages of production TP, MP, AP and their relationship, Elasticity of production. Product-Product relationship, product substitution and optimum combination of enterprises. Factor-Factor relationship – resources substitution and least-cost combination, Iso-quant, Ridge line, scale to return, expansion path.

UNIT-III-

Linear Programming- Assumption of linear programming model, Essential of linear programming, Concept of linear programming, Basic graphic and simplex solution of linear programming.

UNIT-IV-

Technology in agricultural production, nature and effects and measurement – Measuring efficiency in agricultural production; technical, a locative and economic efficiencies – Yield gap analysis-concepts.

PAPER – 402 SEMINAR   MM:50

PAPER 403 THESIS WORK FOR RESEARCH   MM:150

VIVA-VOCE FOR THESIS WOK FOR RESEARCH   MM:100

OR

SPECIAL PAPER (PAPER A+ B))

THESIS WORK FOR RESEARCH
Suggested Broad Topics for Research Work

• Economics of Irrigation water in different agro-climatic conditions

• Potential of exports of agri-products

• Potential domestic as well as international markets for value added agri-products

• Demand & supply gap of different agri-products and agri-inputs

• Economic analysis of new agri-technologies

• Input use efficiency in different agro-climatic conditions

• Income and expenditure pattern in rural areas

- Saving and investment pattern in rural areas
- Return from investment in agriculture research
- Marketing of agri-products in WTO regime
- Impact of WTO on agricultural economy
- Impact of Agricultural credit on socio-economic condition of the farmers
- Optimization of production process to reduce the cost of production
- Processing and value addition in agriculture sector
- Emerging international marketing scenario of agri-products
- Extent of farmers' indebtedness in different agro-climatic conditions

OR

SPECIAL PAPERS (PAPER A+B)

PAPER – 403-A SPECIAL PAPER - AGRICULTURAL CO-OPERATION

MM:75

UNIT -I-

Co-operation- meaning and concept, principles of co-operation, economic planning and co-operation, role of co-operative in agricultural development, history of co-operative movement in India.

UNIT -II-

Agricultural Co-operatives- credit co-operatives: Primary, Central, Apex/state, Land Development Bank.

UNIT -III-

Marketing co-operatives, processing co-operatives, service co-operatives, co-operative farming, co-operative dairies.

UNIT -IV-

Co-operative management- definition, essential elements management, co-operative management in India, co-operative supervision, inspection and auditing.

PAPER – 403-B   SPL. PAPER- AGRICULTURAL DEVELOPMENT POLICIES   **MM:75**

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 – Economic and Non-Economic factors of economic growth.

UNIT -II-

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 -III-

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

UNIT -IV-

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.

PRACTICAL FOR SPACILA PAPER   **MM:100**

Production relationship (FP, FF & PP) different forms of production functions, return to scale, elasticity of production, least-cost combination, cost function estimation, estimation of ridge line expansion path, estimation of yield gap in corporation of technology in production function.