FACULTY OF AGRICULTURE

SYLLABUS

For

M.Sc. Ag. (Agricultural Economics)

(Semester: I–IV)

Session: 2020-21

KHALSA COLLEGE AMRITSAR-143001

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-I

Sr. No.	Course Code	Subject	Periods per week		Marks		Internal Assesment*	Grand Total
			Th.	Pract.	Th.	Pract.		
1	AGE-511	Agri. Marketing & Price Analysis	4	3	75	37	38	150
2	AGE-512	Econometrics	4	3	75	37	38	150
3	AGE-513	Farm Management Economics	4	6	75	37	38	150
4	TWC-514	Technical Writing and Communication Skills	2	0	37	-	13	**50 (NC)**
5	SSC-410/ AGR-410 (Minor)	Soil Chemistry and Bio Chemistry/ Crop Ecology	4	6	75	37	38	150
6	STA-415	Statistical Methods for Research Workers	4	3	75	37	38	150
		Research Work (Synopsis)	-	2	-	-	**-**	**--**
	Total		**22**	**23**	**375**	**185**	**190**	**750**

* Total Internal Assessment to be given = 25% (House Test - 10%; Attendance - 10%; Conduct & Academic, Extra Curricular Activities - 5%).

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SEMESTER-II

Sr. No.	Course Code	Subject	Periods per week		Marks		Internal Assesment*	Grand Total
			Th.	Pract.	Th.	Pract.		
1	AGE-521	Agricultural Production Economics	4	6	75	37	38	150
2	AGE-522	Research Methodology for Social Sciences	4	3	75	37	38	150
3	AGE-523	Agri. Finance & Project Management	4	3	75	37	38	150
4	AGE-524	Linear Programming	4	3	75	37	38	150
5	ABM-525/ AGE-525	Management of Agribusiness Cooperatives/ Natural Resource and forest Resource Economics	4	3	75	37	38	150
6	AGR-420/ VSC-420 (Minor)	Farm Cropping System / Fundamentals of Vegetable Production	4	6	75	37	38	150
		Research Work (Synopsis)	-	2	-	-	-	--
	Total		24	26	450	222	228	900

* Total Internal Assessment to be given = 25% (House Test - 10%; Attendance - 10%; Conduct & Academic,Extra Curricular Activities - 5%).

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SEMESTER-III

Sr. No.	Course Code	Subject	Periods per week		Marks		Internal Assesment*	Grand Total
			Th	Pract	Th	Pract		
1.	AGE-531	Micro Economics	6	0	75	--	25	100
2.	AGE-532	Evolution of Economic Thought	4	0	75	--	25	100
3.	AGE-533	Rural Marketing	4	0	75	--	25	100
4.	MGT-430/ STA-430 (Minor)	Agri -Business Management / Sampling Theory	4	3	75	37	38	150
5.		Credit Seminar	3	--	100	--	--	100
6.		Research Work (Thesis)	-	4	--	--	--	S/US
Total			**21**	**7**	**400**	**37**	**113**	**550**

* Total Internal Assessment to be given = 25% (House Test - 10%; Attendance - 10%; Conduct & Academic,Extra Curricular Activities - 5%).

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SEMESTER-IV

Sr. No.	Course Code	Subject	Periods per week		Marks		Internal Assessmen*	Grand Total
			Th	Pract	Th	Pract		
1.	AGE-541	Macro Economics and Policy	6	0	75	--	25	100
2.	AGE-542	Agricultural Development and Policy	6	0	75	--	25	100
3.		Research work (Thesis)	--	4	--	--	--	S/US
		Total	**12**	**04**	**150**	**--**	**50**	**200**

* Total Internal Assessment to be given = 25% (House Test - 10%; Attendance - 10%; Conduct & Academic,Extra Curricular Activities - 5%).

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-I

AGE-511: **Agricultural Marketing and Price Analysis**

Time: 3 Hours

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Max. Marks: 150
Theory: 75
Practical: 37
Internal assessment: 38
Periods per week: 04+3

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Instructions for the Paper Setters:

1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory

Section-A: Market structure, conduct and performance analysis. Problems in Agricultural Marketing from Demand, Supply and Institutions sides. Market intermediaries and regulation. Marketable & Marketed surplus estimation. Marketing Efficiency. Vertical and Horizontal integration.

Section-B: Marketing Co-operatives – APMC, 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.

Section-C: Role of information technology and telecommunication in marketing of agricultural commodities - Market research, Market information service, electronic auctions (e-bay), e-Chaupals, Agmarket, Domestic and Export market Intelligence Cell (DEMIC). Market extension.

Section-D: Spatial and temporal price relationship – price forecasting, time series analysis, time series models, spectral analysis. Price policy and economic development – Non-price instruments. 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:

Training of supply and demand elasticities, price spread, price forecasting, concentration ratios and marketing efficiency analysis. Marketing structure analysis of regulated market and marketing societies. Analysis on contract farming and supply chain management. Chain Analysis - quantitative estimation of supply chain efficiency. Online searches for market information sources and interpretation of market intelligence reports. Technical and fundamental Analysis for important agricultural commodities- presentation of the survey results and wrap-up discussion.

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SEMESTER-I

AGE-512:   **Econometrics**

Time: 3 Hours   **Max. Marks: 150**

Theory: 75

Practical: 37

Internal assessment: 38

Periods per week: 04+3

Instructions for the Paper Setters:

1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions of 15 marks covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory

Section-A: Introduction – relationship between economic theory, mathematical economics, models and econometrics, methodology of econometrics-regression analysis.Basic two variable regression - assumptions estimation and interpretationapproaches to estimation - OLS, MLE and their properties - extensions to

Section-B: Multi variable models-multiple regression estimation and interpretation. Violation of assumptions – identification, consequences and remedies for Multicollinearity, heteroscedasticity.

Section-C: Autocorrelation – data problems and remedialapproaches - model misspecification. Use of dummy variables-limited dependent variables – specification, estimation and interpretation.

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

Practical: **Time: 3 Hours**

Practicals on single equation two variable model specification and estimation, hypothesis testing, transformations of functional forms and OLS application. Estimation of multiple regression models - hypothesis testing, testing and correcting specification errors, testing and managing multicollinearity, heteroscedasticity, autocorrelation. Estimation of regressions with dummy variables, estimation of regression with limited dependent variable. Identification of equations in simultaneous equation systems.

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SEMESTER-I

AGE-513:   **Farm Management Economics**

Time: 3 Hours   **Max. Marks: 150**
Theory: 75
Practical: 37
Internal assessment: 38
Periods per week: 4+6

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory
Section-A: Meaning and functions; development of farm management as a science, management factor in commercial agriculture.
Section-B: Organization and operation of the farm business for optimal resource use.
Section-C: Cost and returns concepts. Relationship between different farm enterprises. Farm adjustment programmes under uncertain conditions.
Section-D: Farm records and accounting. Efficiency measures for different types of enterprises and farm business.

Practical: **Time: 3 Hours**
        Preparation of layout maps, maintenance of farm business records, summarization and analysis of the accounts and preparation of enterprise, labour and partial budgets, alternative plans and control charts in respect of the assigned farm.

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-I

TWC-514   **Technical Writing and Communication Skills**

Time:-3 hours   **Max. Marks: 50**
                                                                                                Theory Marks: 37
                                                                                         Internal Assessment: 13
                                                                                          Periods per week: 02+0

Instructions for the Paper Setters:
1) The question paper will consist of seven skill–oriented questions.
2) The first 6 Questions carry 5 marks each. There will be internal choice wherever possible
   (6x5=30 Marks).
3) There will be one essay type question out of two parts of the course. The student has to attempt any one of the two in about 150 words   (1x7=7 Marks)

Course Contents:

1**. Technical Writing**-Various forms of technical writing-theses, technical papers, reviews, electronic communication etc; qualities of technical writing; parts of research communications- title page, content page, authorship, preface, introduction, review of literature, materials and methods, experimental results, documentation; photographs and drawings with suitable captions; pagination; citations; writing of abstracts; précis; synopsis; editing and proof reading.

2. **Communication Skills**-defining communication; types of communication- verbal and non-verbal; assertive communication; assertive communication; using language for effective communication; paraphrasing; vocabulary building- word roots, prefixes.

Recommended Books:
1. *Oxford Guide to Effective Writing and Speaking* by John Seely.
2. *The Written Word* by Vandana R Singh, Oxford University Press

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SSC-410   **Soil Chemistry and Bio Chemistry (Minor)**

Time: 3 Hours   **Max. Marks: 150**
                                                                             Theory: 75
                                                                             Practical: 37
                                                          Internal assessment: 38
                                                          Periods per week: 04+06

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory
Section-A: Soil colloids–nature, properties, origin of charges and their significance; Cation and anion exchange phenomena and their importance; Introduction to ionic adsorption and fixation; **Section-B:** Soil reaction and buffering; Distribution, characterization, genesis and amelioration of acid, acid sulphate, saline, saline-sodic, sodic and calcareous soils; Plant reaction and tolerance to soil salinity, sodicity and acidity;
Section-C: Chemical and electro chemical properties of submerged soils; Organic matter and characterization of clay –organic matter interaction ;
Section-D: Biochemical decomposition of organic manures and farm wastes, composting and vermicomposting .Biochemistry of humus formation and biogas production .

Practical:
Determination of the effect of dilution and salinity on soil pH; Active and potential acidity; Cation and anion exchange capacity and exchangeable cations; Soluble salts in soils; Lime and gypsum requirements. Nutrient adsorption and fixation capacities of soils; Estimation of biochemical constituents of organic residues- cellulose, hemi-cellulose, lignin and C: N ratio. Preparation of enriched compost, biofertilizers and vermiculture.

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SEMESTER-I

AGR-410   **Crop Ecology (Minor)**

Time: 3 Hours   **Max. Marks: 150**
Theory: 75
Practical: 37
Internal assessment: 38
Periods per week: 04+6

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory

Section-A: Ecology in relation to crop; Eco system- components and energy flow- food chain and energy output relationships; Agro- ecosystem and agro-ecological zones of India; Efficient food producing systems;

Section-B: Farming system of the world-arable, pastoral, lay farming, shifting cultivation, ranching and agro-forestry systems, energy and fuel, wood plantations; Specialized and diversified forming;

Section-C: Family, co-operative and collective farming, their occurrence and adaptation and weakness; Cropping systems, their characteristics and management;

Section-D: Cropping patterns; Farm selection, size of the farm and farm layout, cropping schemes and crop plans; solar radiation concepts, laws and their absorption in crop system; Bio-geo-chemical cycle and their significance.

Practical: **Time: 3 Hours**

Analysis of crop ecosystem components; Light measurement in pure and mixed crop stands; Modification in crop environment; Measuring temperature, light and moisture effects: Preparation of farm lay out plans, different intensity crop rotations and cropping schemes; Estimating crop yields; Energy budgeting in different crops and cropping systems; Working out ecological optimum crop zones.

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SEMESTER-I

STA-415:   **Statistical Methods for Research Workers**

Time: 3 Hours   **Max. Marks: 150**
Theory: 75
Practical: 37
Internal assessment: 38
Periods per week: 04+3

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory

Section-A: Probability and fitting of standard frequency distribution, sampling techniques, sampling distributions, mean and standard error.

Section-B: Simple partial, multiple and intra- class correlation and multiple regression.

Section-C: Tests of significance, students'-t, chi-square and large sample tests, confidence intervals.

Section-D: Analysis of variance for one way and two way classification with equal cell frequencies, transformation of data.

Practical: **Time: 3 Hours**

Fitting of distributions, samples and sampling distributions, correlation and regression, tests of significance and analysis of variance.

Note: Students shall be trained to use computer to analysis the data, using available softwares. However, during university examination students will use scientific calculators to analyse the data.

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SEMESTER-II

AGE-521:   **Agricultural Production Economics**

Time: 3 Hours   **Max. Marks: 150**
Theory: 75
Practical: 37
Internal assessment: 38
Periods per week: 04+6

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory

Section-A: Nature, scope and significance of agricultural production economics- Agricultural Production processes. Production functions, assumptions, commonly used forms, properties, limitations, specification, estimation and interpretations.

Section-B: 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.

Section-C: 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.

Section-D: Technology in agricultural production, nature, 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, modelling and coping strategies.

Practical: **Time: 3 Hours**

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.

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-II

AGE-522:   **Research Methodology for Social Sciences**

Time: 3 Hours   **Max. Marks: 150**
                                                                      Theory: 75
                                                                    Practical: 37
                                                      Internal assessment: 38
                                                      Periods per week: 04+3

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory:

Section-A: Importance and scope of research in social sciences. Concept and characteristics of social research. Types of research. Fundamental vs. Applied. Concept of researchable problem – research prioritization, research process.

Section-B Hypothesis – meaning, characteristics, types and testing. Review of literature. Development of theoretical orientation of the research problem. Concept, construct, variables and their measurement.

Section-C: Sampling design, sampling error and methods of sampling. Research design and techniques. Types of data collection tools and testing their reliability and validity. Scaling techniques. Coding, editing, tabulation and validation of data.

Section-D: Tools of data analysis. Statistical package for social sciences, interpretation of results, preparing research report / thesis. Writing of articles. Universal procedures for preparation of bibliography.

Practical: **Time: 3 Hours**

Selection and formulation of research problem, objectives and hypothesis. Selection of variables and their operationalization. Developing conceptual framework of research. Development of data collection tools and measuring their validity and reliability. Data processing, tabulation and analysis. Formulation of secondary tables. Writing of thesis and research articles. Presentation of reports.

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-II

AGE-523:   **Agri. Finance and Project Management**

Time: 3 Hours   **Max. Marks: 150**

Theory: 75

Practical: 37

Internal assessment: 38

Periods per week: 04+3

Instructions for the Paper Setters:

1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory

Section-A: 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.

Section-B: Micro-Financing and Role of MFI's -NGO's, and SHG's. 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.

Section-C: Financial Decisions – Investment, Financing, Liquidity and Solvency. Financial statements - Balance Sheet, Cash Flow Statement and Profit and Loss Account. Ratio Analysis. Project Approach in financing agriculture. Financial, economic and environmental appraisal of investment projects. Identification, preparation, appraisal, financing and implementation of projects.

Section-D: 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. 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.

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-II

AGE-523:   **Agri. Finance and Project Management**

Practical: **Time: 3 Hours**

Estimation of demand and supply gaps of institutional agricultural credit. Preparation of farm credit plan and 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 agricultural investment projects. Practical training of project appraisal techniques. – Undiscounted and Discounted Measures along with their limitations. Case Study Analysis of an Agricultural project, Financial Risk and risk management strategies.

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-II

AGE-524   **Linear Programming**

Time: 3 Hours   **Max. Marks: 150**
                                                                Theory: 75
                                                             Practical: 37
                                              Internal assessment: 38
                                                   Periods per week: 04+3

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory
Section-A: 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.
Section-B: Simplex Method: Concept of simplex Method, solving profit maximization and cost minimizations problems. Formulation of farms and non-farm problems as linear programming models and solutions.
Section-C: Extension of Linear Programming models: Variable resource and price programming, transportation problems, recursive programming, dynamic programming.
Section-D: 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: **Time: 3 Hours**

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.

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SEMESTER-II

ABM-525:   **Management of Agribusiness Cooperatives**

Time: 3 Hours   **Max. Marks: 150**
Theory: 75
Practical: 37
Internal assessment: 38
Periods per week: 04+3

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory:

Principles of Co-operation. Cooperative administration: a global perspective, cooperative sector and economic development. Cooperative management: nature, functions and purpose of cooperatives, procurement, storage, processing, marketing, process of cooperative formation, role of leadership in cooperative management. Human resource management, placement and role of board of directors in cooperative management. Overview of agribusiness cooperative: credit cooperatives, cooperative marketing, dairy cooperative, financing agribusiness cooperative. Impact of liberalization, privatization and globalization on agribusiness sector. Agribusiness policies: concept and formulation and new dimensions in agri-business environment and policy.

Practical:

Visit to various agribusiness co-operatives. Case studies of various co-operatives, Study of working and functioning of various agriculture co-operative institutions.

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-II

AGE-525:   **Natural Resource and forest Resource Economics**

Time: 3 Hours   **Max. Marks: 150**
Theory: 75
Practical: 37
Internal assessment: 38
Periods per week: 04+3

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory:

Concepts, classification and problems of natural resources ,Importance of forests, use of economic principles in forest resource problems, Forest product : demand and supply analysis, forest product marketing, forest capital theory, Inter regional and international trade in forest products. Impact of economics and physical variables upon forest appraisal and management decision, Externalities and property rights. Natural and environmental resource accounting: methods and implications. Sources and types of pollution: air, water, solid waste, land degradation, environmental and economic impacts. Concept of sustainability, Indicators of sustainability. International environment issues, climate change and international treaties on them, Relationship between development and environmental stress

Practical:

Exercises on estimation of demand and supply functions, biodiversity valuation, valuation of non marketed forest products. Exercises on financial and economic appraisal of forestry projects. Exercises on financial and economic appraisal of forestry projects. Exercises on marketing of forest products and international trade competitiveness.

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-II

AGR-420   **Farm Cropping System (Minor)**

Time: 3 Hours   **Max. Marks: 150**
Theory: 75
Practical: 37
Internal assessment: 38
Periods per week: 04+6

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory

Section-A: Farming systems-introductions terms and definitions ; Concept and its role in sustainability of agriculture; Factor effecting choice of farming system; Resource management in relation to farm cropping system;

Section-B: Crop yield appraisals; Plant interaction, criteria for assessing yield advantages ;Indices for evaluating productivity and efficiency; Agronomic consideration interaction in sequential cropping ;

Section-C: Evaluation and productivity of multiple cropping systems; Cropping systems in dry land farming; Cropping systems for irrigated areas; Cropping systems in high rainfall areas;

Section-D: Cropping systems with perennials; Introduction to agro forestry concept; Physiological and actual maturity of crop and criteria of crop harvest; Comparison of chemical and organic farming;

Practical: **Time: 3 Hours**

Visit to farming system and agro-based industries; Farm lay out plan, cropping scheme; Practical study of raising crops: Wheat, Rice, Maize Sugarcane, Groundnut, Toria, Gobi Sarson; Estimation of crop yield, calculation of harvest index, land equitant ratio in mixed crops/ intercrops.

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-II

VSC-420   **Fundamentals of Vegetable Production (Minor)**

Time: 3 Hours   **Max. Marks: 150**
                                                             Theory: 75
                                                          Practical: 37
                                            Internal assessment: 38
                                            Periods per week : 04+6

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory

Role of soil, climatic and agronomic factors in vegetable production; Principles of cultivation including direct sowing; Nursery management, transplanting, hardening of seedlings and vegetable forcing ; Weeds and their control ; Rotation and intercropping in vegetable crops; Export potentiality, post-harvest handling processing , storage and marketing of vegetable.

Practical: **Time: 3 Hours**

Sowing and transplanting of vegetable crops: Effect of soil conditions on emergence of seedlings and plant growth; Nutrient deficiency symptoms; Common weeds, their identification and control; project formulation and evaluation for vegetable nursery production and vegetable forcing techniques.

M.Sc. Ag. (AGRICULTURAL ECONOMICS)

SEMESTER-III

AGE-531:   **Micro Economics**

Time: 3 Hours

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Max. Marks: 100
Theory: 75
Internal assessment 25
Periods per week: 06

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Instructions for the Paper Setters:
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4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory:

Section-A: Theory of consumer behavior – Cardinal Utility Approach, Ordinal Utility Approach, Applications of Indifference Curve Approach, Revealed Preference Hypothesis. Demand theory, elasticity of demand. Consumer surplus.

Section-B: Theory of the firm. Theory of Production – Production functions, Returns to scale and economies of scale. Theory of Costs – Cost curves, Profit maximization and cost minimization.

Section-C: Law of Supply, Producers' surplus Price determination under various market situations – Monopoly, Monopolistic competition, Oligopoly.

Section-D: Theories of distribution. General Equilibrium Theory. Welfare Economics.

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SEMESTER-III

AGE-532:   **Evolution of Economic Thought**

Time: 3 Hours   **Max. Marks: 100**
Theory: 75
Internal assessment 25
Periods per week: 04

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory:

Section-A: History of economic thought - Absolutist vs. Relativist approaches. Evolution of Economic Thought vs. Economic History. Ancient economic thought - medieval, mercantilism,' physiocracy. Forerunners of Classical Political Economy. Development of Classical Thoughts **Section-B:** (Adam Smith, Robert Malthusand 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

Section-C: The birth of neoclassical economic thought Marshall and Waltras. General Equilibrium Theory. Welfare Theory - Keynesian economics. The Era of globalization. Experiences of developing world. Rigidity of the past vs. emerging realism.

Section-D: The changing path of international institutions to economic groW1h and development approaches. 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.

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SEMESTER-III

AGE-533:   **Rural Marketing**

Time: 3 Hours   **Max. Marks: 100**
                                                            Theory: 75
                               Internal assessment 25
                                   Periods per week: 04

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory:

Section-A: Concept and scope of rural marketing- nature, characteristics and potential. Environmental factors - socio-cultural, economic and other environmental factors affecting rural marketing. Rural consumer's behaviour - behaviour of rural consumers and farmers; buyer.

Section-B: Characteristics and buying behaviour. Rural v/s urban markets. Rural marketing strategy - marketing of consumer durable and non-durable goods and services in the rural markets with special reference to product planning;

Section-C: Product mix, pricing course objective, pricing policy and pricing strategy. Input marketing in the rural areas, Inter linkage of rural marketing with credit.

Section-D: Product promotion - Media planning, planning of distribution channels, and organizing personal selling in rurall1larket in India.

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SEMESTER-III

MGT-430:   **Agri -Business Management (Minor)**

Time: 3 Hours   **Max. Marks: 150**
Theory: 75
Practical: 37
Internal assessment =38
Periods per week: 04+3

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).
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Theory:

Section-A: Nature of agri-business; evolution and changing dimensions of agri-business in India; Characteristics of production, consumption and marketable surplus of agricultural output; **Section-B:** Type and Characteristics of marketing of agricultural products, problems of agricultural marketing in India;
Section-C: Rural marketing, distribution system, marketing of agricultural inputs; Marketing by the government, functioning of selected procurement agencies;
Section-D: Locational factors and other problems in processing of agricultural products; Management of agro-industries.

Practical:
       Students visit to wholesale grain market, fruits and vegetables market for understanding the composition, functioning and problems in marketing systems; Case studies, analysis and discussion. To suggest improvements in present marketing structure.

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SEMESTER-III

STA-430: **Sampling Theory (Minor)**

Time: 3 Hours   **Max. Marks: 150**
                                                           Theory: 75
                                                          Practical: 37
                                       Internal assessment =38
                                       Periods per week : 04+3

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory:

Advantages, uses and steps involved in sample surveys, design and organization of pilot and large sample surveys, sampling from finite populations, simple random sampling, inverse sampling, use of anciliary information, ratio, product, difference and regression methods of estimation, pps sampling, stratified random sampling, estimation of proportion, cluster sampling, systematic sampling and multistage sampling, double sampling, non-sampling errors- their control and estimation, randomized response techniques, design of agricultural and forestry surveys, national sample surveys , recent developments in sampling.

Practical: **Time: 3 Hours**

Simple random sampling, probability proportional to size sampling, use of auxiliary information at estimation stage, systematic, stratified, cluster and multistage sampling and double sampling.

Note: Students are allowed to use scientific calculator in University examinations; statistical tables will be provided to students in examinations. No rigorous mathematical proofs are expected from students; stress will be on application only.

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SEMESTER-III

CREDIT SEMINAR

Total Marks: 100
Periods per week: 03

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SEMESTER-IV

AGE-541:   **Macro Economics and Policy**

Time: 3 Hours   **Max. Marks: 100**
Theory: 75
Internal Assessment=25
Periods per week: 06

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).
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Theory:

Section-A: Nature and Scope of Macro Economics. National Income - concepts and measurement. Classical theory of Employment and Say's Law. Modem theory of Employment and Effective Demand.

Section-B: 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.

Section-C: Money-Classical theories of Money and Price. Keynesian theory of money. Supply of Money. Demand for Money. Inflation nature, effects and control. IS & LM framework - General Equilibrium of product and money markets.

Section-D: Monetary policy. Fiscal policy. Effectiveness of Monetary and Fiscal policy. Central banking. Business cycles. Balance of Payment. Foreign Exchange Rate determination.

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SEMESTER-IV

AGE-542:   **Agricultural Development and Policy**

Time: 3 Hours   **Max. Marks: 100**
Theory: 75
Internal Assessment=25
Periods per week: 06

Instructions for the Paper Setters:
1. Question paper should be set strictly according to the syllabus.
2. The language of questions should be straight & simple.
3. In all nine questions should be asked, of which first question of 15 marks (Comprising of 10 short answer type questions covering the whole syllabus) will be compulsory.
4. Of the remaining eight questions, two questions should be asked from each section, of which the candidates are required to attempt one question from each section. All questions carry equal marks (15).

Theory:
Section-A: Development Economics- Scope and Importance. Economic development and economic growth. 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.

Section-B: Obstacles to economic development - Economic and Non-Economic factors of economic growth. Economic development - meaning, stages of economic development, determinants of economic growth. Theories of economic growth. Optimal Economic Growth. Recent Experiences of developing country economies in transition.

Section-C: Role of state in economic development. Development planning. Role of agriculture in economic/rural development. Agriculture and food supply, resource policies, credit policies, input and product marketing policies, price policies. Development issues, poverty, inequality, unemployment and environmental degradation.

Section-D: Models of Agricultural Development - Induced Innovation Model. Policy options for sustainable agricultural development. Globalization and Agricultural Development. The dilemma of free trade- Free trade versus Protectionism. Role of protection in Developing Countries. WTO - Agreement on Agriculture.

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SEMESTER-IV

RESEARCH WORK

S/US
Periods per week: 04