

Course :	COMP 231		Credit:	2(1+1)	Semester-III
Course title:	Agri-informatics				

Syllabus

Theory

Theory: Introduction to Computers, Anatomy of Computers, Memory Concepts, Units of Memory, Operating System, definition and Types, Data Representation, Number systems (Binary, Hexadecimal). Difference between ASCII & UNICODE. Applications of MS-Office for creating, Editing and Formatting of Document, Data presentation, Tabulation and Graph creation, statistical analysis, mathematical expressions, Database-Concepts and Types, creating database, uses of DBMS in agriculture, Internet. And World Wide Web(WWW), Concepts, Components and creation of web, HTML, XML, coding.

e- Agriculture, concepts, design and development. ICT for data collection: Formation of development programmes, monitoring and evaluation; Computer models in agriculture: Statistical, weather analysis and crop simulation models- Concepts, structure, files, limitations and advantages. Application for understanding plant processes, sensitivity, verification, calibration and validation; IT application for computation of water and nutrient requirement of crops; computer controlled devices for agri-input management; Smartphone Apps in Agriculture for farm advises, market price, postharvest management etc; Geospatial technology for generating valuable agri-information. Decision support systems, concepts, components and applications in Agriculture, Agriculture Expert System, Soil Information Systems etc for supporting Farm decisions. Communication process, Berlo's model, feedback and barriers to communication.

Practical

Study of Computer Components, accessories, practice of important DOS Commands, Introduction of different operating systems such as MS-Windows, UNIX/ Linux, Creating, Files & Folders, File Management. Use of MS-WORD and MS Power Point for creating, editing and presenting a scientific document. Handling of tabular data; Animation, Video tools, art tool, graphics, template and designs; MS-EXCEL – Creating a spreadsheet, use of statistical tool, writing expressions, creating graphs, analysis of scientific data a; MS-ACCESS: Creating database, preparing queries and reports, Demonstration of agri information system, Introduction to World Wide Web and its components. Demonstration of Scientific websites and identifying components. Hands on Crop Simulation Models (CSM) such as DSSAT/Crop-Info/CropSyst/Wofost; Computation of water and nutrient requirements of crop using CSM and IT tools; Use of Smart phones and other devices in agro-advisory and dissemination of market information; Introduction of Geospatial technology; Demonstration of generating information important for agriculture; Hands on practice on preparation of Decision Support system

Teaching Schedule

a) Theory

Lecture	Topics	Weightage (%)
1	Introduction to Computers, Definition: Hardware, Software & firmware. Types of software.	5
2	Data Representation, Number systems (Binary, Hexadecimal). Difference between ASCII & UNICODE (Different Encoding Schemes)	5
3	Primary, Secondary Memory, Units used for measurement of memory, Input Output devices	6
4	Operating Systems, definition and types	5
5	File Management.	6
6	Applications used for document creation & Editing, Data presentation using slides.	8
7	Use of Spreadsheets for statistical analysis, evaluating mathematical & logical expressions.	8
8	Use of Spreadsheets for Interpretation and graph creation.	4
9	Database, concepts and types, uses of DBMS/RDBMS in Agriculture	8
10	Database design, creation,	4
11	Database, concepts and types, uses of DBMS/RDBMS in Agriculture	4
12	Database design, creation,	4
13	Preparation of presentation. Import export operations, using numerical tabular data/text/graph /slides within different applications using cut-paste.	8
14	Smartphone Apps in Agriculture for farm advises, market price, postharvest management etc; Geospatial technology for generating valuable agri-information	8
15	Decision support systems, concepts, components and applications in Agriculture, Agriculture Expert System, Soil Information System etc for supporting Farm decisions.	12
16	Communication process, Berlo's model, feedback and barriers to communication.	5
	Total	100

b) Practical

Exercise	Topic
1	Study of Computer Components, accessories
2	practice of important DOS Commands
3	Introduction of different operating systems such as MS-Windows, Unix/ Linux, Creating, Files & Folders, File Management.
4	Word-Processing-1
5	Word Processing-2
6	Presentation
7	Spreadsheet-1
8	Spreadsheet-2
9	Spreadsheet-3
10	DBMS/RDBMS Creating, Updating database
11	Querying/Retrieving data, relation
12	Introduction to World Wide Web (WWW). Demonstration of Agri-information
13	Handson Crop Simulation Models (CSM) such as DSSAT/Crop-Info/CropSys/Wofost; Computation of water and nutrient requirements of crop using CSM and IT tools.
14	Introduction of Geospatial Technology for generating valuable information for Agriculture.
15	Hands on Decision Support System
16	Introduction of programming languages. Preparation of contingent crop

Suggested Readings

- 1) Computer Fundamentals by Pradeep K. Sinha and Priti Sinha, III edition, BPB Publications, B-14, Connaught Place, New Delhi – 110 001.
- 2) Computer Fundamentals by P.K. Sinha, BPB Publications, B-14, Connaught Place, New Delhi – 110 001.
- 3) Mastering Office Professional for window 95, BPB Publications, B-14, Connaught Place, New Delhi – 110 001.
- 4) Statistical Methods for Agricultural workers by V.G. Panse and P.V. Sukhatma, ICAR, New Delhi.

- 5) http://www.tutorialsforopenoffice.org/category_index/base.html
- 6) <http://mkisan.gov.in/downloadmobileapps.aspx>
- 7) <http://www.nrsc.gov.in/Agriculture>
- 8) <http://iasri.res.in/>
- 9) <http://communicationtheory.org/berlos-smcr-model-of-communication/>

Course :	STAT 231	Credit:	2(1+1)	Semester-III
Course title:	Statistical Methods			

Syllabus

Theory

Definitions of Statistics and its applications in Agriculture, limitations, types of data, classifications and frequency distribution, Histogram, frequency curve, frequency polygon, cumulative frequency curve (ogive curve)

Arithmetic mean, median, mode, GM, HM, weighted average, quartile, deciles, percentiles, Characteristics of ideal measure, merits and demerits of various measures (grouped and ungrouped data), Range, mean deviation, quartile deviation, standard deviation and variance and respective relative measures (grouped and ungrouped Data), Concept of measures of Skewness and Kurtosis.

Definitions of population, sample, parameter, statistic, need of sampling, sampling versus complete enumeration and introduction to simple random, stratified and multistage sampling methods. Simple random sampling with and without replacement. Use of random number tables for selection of simple random sample.

Random experiment, events (simple, compound, equally likely, complementary, independent) Definitions of probability (mathematical, statistical, axiomatic), addition and multiplication theorem (without proof). Simple problems based on probability, Random variable, discrete and continuous random variable, probability mass and density function, definition and properties of Binomial, Poisson and Normal distributions.

Null and alternate hypothesis, types of errors, degrees of freedom, level of significance, critical region, steps in testing of hypothesis, one sample, two sample and paired 't' test. F test for equality of variance, Large sample tests for one sample mean, two sample means 'Z' tests, Chi-square test of goodness of fit, Chi-square test of independence of attributes in 2 X2 contingency table

Definition of correlation, types, scatter diagram. Karl Pearson's coefficient of correlation and its test of significance. Spearman's rank correlation coefficient, Linear regression equations,

definition & properties of regression coefficient, constant, fitting of regression lines, its test of significance, comparison of regression and correlation coefficients

Introduction to analysis of variance, Assumptions of ANOVA, analysis of one way classification and two way classification

Practical

Graphical presentation: Histogram, frequency curve, frequency polygon, cumulative frequency curve (ogive curve)

Computations of arithmetic mean, mode, median, GM and HM, quartiles, deciles & percentiles (Ungrouped data), Computations of arithmetic mean, mode, median, quartiles, deciles & percentiles (grouped data).

Computations of range, mean deviation, quartile deviation, standard deviation and variance and respective relative measures (ungrouped Data), Computations of range, mean deviation, quartile deviation, standard deviation and variance and respective relative measures (grouped data).

Selection of random sample using simple random sampling.

Computations of Karl Pearson's coefficient of correlation with its test of significance, Spearman's rank correlation, Fitting of simple linear regression equation with test of significance of regression coefficient.

Problems on One sample, two Sample and paired t-test, Chi-Square test of Goodness of Fit. Chi-square test of independence of Attributes for 2 X 2 contingency table.

Analysis of Variance one way and two way classification.

Teaching Schedule:

a) Theory

Lecture	Topic	Weightage (%)
1	Introduction: Definitions of Statistics and its applications in Agriculture, limitations, types of data, classifications and frequency distribution	05
2	Graphical presentation: Histogram, frequency curve, frequency polygon, cumulative frequency curve (ogive curve)	04
3	Measures of central tendency: Arithmetic mean, median, mode, GM, HM, weighted average, quartile, decilies, percentiles, Characteristics of ideal measure, merits and demerits of various measures (grouped and ungrouped data)	06
4	Measures of Dispersion: Range, mean deviation, quartile deviation, standard deviation and variance and respective relative measures (grouped and ungrouped Data).	06

Lecture	Topic	Weightage (%)
5	Concept of measures of Skewness and Kurtosis.	05
6	Sampling: Definitions of population, sample, parameter, statistic, need of sampling, sampling versus complete enumeration and introduction to simple random, stratified and multistage sampling methods. Simple random sampling with and without replacement. Use of random number tables for selection of simple random sample.	08
7&8	Probability: Random experiment, events (simple, compound, equally likely, complementary, independent) Definitions of probability (mathematical, statistical, axiomatic), addition and multiplication theorem (without proof). Simple problems based on probability.	08
9&10	Probability distributions: Random variable, discrete and continuous random variable, probability mass and density function, definition and properties of Binomial, Poisson and Normal distributions.	08
11 &12	Test of Significance: Null and alternate hypothesis, types of errors, degrees of freedom, level of significance, critical region, steps in testing of hypothesis, one sample, two sample and paired 't' test. F test for equality of variance	10
13	Large sample tests for one sample mean, two sample means 'Z' tests.	05
14	Chi-square test of goodness of fit, Chi-square test of independence of attributes in 2x2 contingency table	05
15	Correlation: Definition of correlation, types, scatter diagram. Karl Pearson's coefficient of correlation and its test of significance. Spearman's rank correlation coefficient.	10
16	Regression: Linear regression equations, definition & properties of regression coefficient, constant, fitting of regression lines, its test of significance, comparison of regression and correlation coefficients.	10
17	Analysis of Variance: Introduction to analysis of variance, Assumptions of ANOVA, analysis of one way classification and two way classification.	10
	Total	100

b) Practical

Exercise	Topic
1	Graphical presentation: Histogram, frequency curve, frequency polygon, cumulative frequency curve (ogive curve)
2	Measures of central tendency: Computations of arithmetic mean, mode, median, GM and HM, quartiles, deciles & percentiles(Ungrouped data).
3	Computations of arithmetic mean, mode, median, quartiles, deciles & percentiles (grouped data).
4	Measures of Dispersion: Computations of range, mean deviation, quartile deviation, standard deviation and variance and respective relative measures (ungrouped Data).
5	Computations of range, mean deviation, quartile deviation, standard deviation and variance and respective relative measures (grouped data).
6	Selection of random sample using simple random sampling.
7	Correlation: Computations of Karl Pearsons coefficient of correlation with its test of significance
8	Spearman's rank correlation
9&10	Regression: Fitting of simple linear regression equation with test of significance of regression coefficient.
11	Test of Significance: Problems on One sample, two Sample and paired t-test.
12	F test for equality of variance
13 &14	Chi-Square test of Goodness of Fit. Chi-square test of independence of Attributes for 2x2 contingency table.
15&16	Analysis of Variance: Analysis of Variance one way and two way classification.

Suggested Readings:

- 1) Statistical methods for Agricultural workers by Panse V.G. Sukhatme P.V.
- 2) Mathematical statistics by Gupta and Kapoor.
- 3) Statistical Methods by Snedocor and Cochran.
- 4) A Text book of Agriculture Statistics by R. Rangaswami
- 5) Statistics for Agriculture Sciences by Nageshwar Rao G.
- 6) Experimental Designs by Cochran G.W. and Cox G.W.
- 7) Design and Analysis of Experiment by Das M.N. and Giri N.C.
- 8) Statistical procedures for Agricultural Research by Gomez K.A. and Gomez A.A.
- 9) Applied statistics by Gupta and Kapoor

Course :	ECON 121		Credit:	2(2+0)	Semester-II
Course title:	Fundamentals of Agricultural Economics				

Syllabus

Theory

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

Agricultural economics: meaning, definition, characteristics of agriculture, importance and its role in economic development. Agricultural planning and development in the country.

Demand: meaning, law of demand, demand schedule and demand curve, determinants, utility theory; law of diminishing marginal utility, equi-marginal utility principle. Consumer's equilibrium and derivation of demand curve, concept of consumer's surplus. Elasticity of demand: concept and measurement of price elasticity, income elasticity and cross elasticity.

Production: process, creation of utility, factors of production, input output relationship. *Laws of returns*: Law of variable proportions and law of returns to scale.

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

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

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

National income: Meaning and importance, circular flow, concepts of national income accounting and approaches to measurement, difficulties in measurement. Population: Importance, Malthusian and Optimum population theories, natural and socio-economic determinants, current policies and programmes on population control.

Money: Barter system of exchange and its problems, evolution, meaning and functions of money, classification of money, money supply, general price index, inflation and deflation. Banking: Role in modern economy, types of banks, functions of commercial and central bank, credit creation policy.

Agricultural and public finance: meaning, micro v/s macro finance, need for agricultural finance, public revenue and public expenditure. *Tax*: meaning, direct and indirect taxes, agricultural taxation, VAT. *Economic systems*: Concepts of economy and its functions, important features of capitalistic, socialistic and mixed economies, elements of economic planning.

Teaching Schedule

Lecture No.	Topic/Lesson	Weightage
1	<i>Economics</i> : Meaning, subject matter scope and definitions of economics, divisions of economics-Traditional and Modern Approach	6
2	Approaches to economic analysis; micro and macroeconomics, positive and normative analysis- Deductive and Inductive methods of investigation	
3	Nature of economic theory; rationality assumption, concept of equilibrium, economic laws as generalization of human behavior.	
4	Basic concepts: Goods and services, classification of goods, characteristics of goods and services, desire, want, demand, utility, Cardinal and Ordinal approaches, Characteristics of utility - Forms of utility. Cost and price, wealth, capital, income and welfare, Classification of Wealth	4
5	Agricultural economics: meaning, definition, characteristics of agriculture, importance and its role in economic development.	4
6	Cardinal approach/utility theory, Law of Diminishing Marginal Utility – statement, assumptions of law, explanation, limitations of the law, Importance	5
7	Law of Equi-marginal Utility – Meaning, Assumptions, Explanation of the Law, Practical Importance, Limitations	5
8	Consumer’s Surplus – Meaning, Assumptions, Explanation, Difficulties in measuring Consumer’s Surplus, Importance. Ordinal Approach-Consumer’s equilibrium, indifference curve analysis	5
9	Demand – Meaning, Definition, Types of demand - income demand, price demand, cross demand. Demand schedule , demand curve, Law of demand – contraction and extension, increase and decrease in demand, Determinants of demand	5
10	Elasticity of demand – Definition, elastic and inelastic demand, kinds of elasticity of demand, perfectly elastic, perfectly inelastic, relatively elastic, relatively inelastic, unitary elastic demand. Types of elasticity of demand , Price elasticity, income elasticity and cross elasticity of demand, factors affecting demand , practical importance of elasticity of demand	5

Lecture No.	Topic/Lesson	Weightage
11	Production: meaning, process, creation of utility, factors of production, input output relationship.	10
12	<i>Laws of returns</i> : Law of variable proportions and law of returns to scale	
13	<i>Cost</i> : Cost concepts, short run and long run cost curves	
14	Supply – meaning, definition, law of supply, supply schedule, supply curve. Increase and decrease in supply, contraction and extension in supply, factors affecting supply.	7
15	Elasticity of supply, kinds of elasticity of supply – perfectly elastic, perfectly inelastic, relatively elastic, relatively inelastic and unitary elastic - factors affecting elasticity of supply.	
16	Market structure: meaning and types of market, basic features of perfectly competitive and imperfect markets.	6
17	Price determination under perfect competition;	
18	Short run and long run equilibrium of firm and industry, shut down point, normal & super normal profits	
19	Distribution theory: meaning, factor market and pricing of factors of production.	4
20	Concepts of rent, wage, interest and profit.	
21	<i>National income</i> : Meaning and importance, circular flow, concepts of national income accounting- Gross domestic product, gross national product, net national product, net domestic product- national income at factor cost, personal income, disposable income	10
22	Methods/Approaches of measurement of NI – product method, income method and expenditure method, Difficulties in measurement.	
23	Population: Importance, Malthusian and Optimum population theories,	5
24	Natural and socio-economic determinants, current policies and programmes on population control.	
25	Money: Barter system of exchange and its problems, evolution, meaning and functions of money,	5
26	Classification of money, money supply,	

Lecture No.	Topic/Lesson	Weightage
27	General price index, inflation and deflation.	3
28	Central bank functions and important policies	4
29	Public revenue and public expenditure	
30	<i>Tax</i> : meaning, direct and indirect taxes, agricultural taxation, VAT.	3
31	<i>Economic systems</i> : Concepts of economy and its functions	4
32	Important features of capitalistic, socialistic and mixed economies, elements of economic planning.	
Total		100

Suggested Readings:

- 1) Dewett, K.K. and Chand, A.2009 Modern Economic Theory S.Chand and Co., New Delhi
- 2) Dewett, K.K. and Varma, J.D. 1986 Elementary Economics S.Chand and Co., New Delhi.
- 3) Jhingan, M.L.1990 Advanced Economic Theory Vikas Publishing House, New Delhi
- 4) Subba Reddy, S, Raghu Ram, P., Sastry, T.V.N. and Bhavani Devi, I. 2010
- 5) Agricultural Economics Oxford & IBH Publishing Co., Pvt. Ltd., New Delhi
- 6) Nagpure S.C., and Patil E.R.2011,2014, Principles of Agricultural Economics by, Agroment Publishers, 52 B, Indraprasta, Opp. Asha Mangal, Dharampeth, Nagpur-440010(MS)India.

Course :	ECON 242		Credit:	3(2+1)	Semester-IV
Course title:	Agricultural Finance and Cooperation				

Syllabus

Theory

Agricultural Finance- meaning, scope and significance, credit needs and its role in Indian agriculture. Agricultural credit: meaning, definition, need, classification. Credit analysis: 4 R's, and 3C's of credits. Sources of agricultural finance: institutional and non-institutional sources, commercial banks, social control and nationalization of commercial banks, Micro financing

including KCC. Lead bank scheme, RRBs, Scale of finance and unit cost. An introduction to higher financing institutions – RBI, NABARD, ADB, IMF, world bank, Deposit Insurance and Credit Guarantee Corporation of India. Cost of credit. Recent development in agricultural credit. Preparation and analysis of financial statements – Balance Sheet and Income Statement. Basic guidelines for preparation of project reports- Bank norms – SWOT analysis.

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

Practical

Determination of most profitable level of capital use. Optimum allocation of limited amount of capital among different enterprise.

Analysis of progress and performance of cooperatives using published data. Analysis of progress and performance of commercial banks and RRBs using published data.

Visit to a commercial bank, cooperative bank and cooperative society to acquire firsthand knowledge of their management, schemes and procedures.

Estimation of credit requirement of farm business – A case study.

Preparation and analysis of balance sheet – A case study.

Preparation and analysis of income statement – A case study.

Appraisal of a loan proposal – A case study.

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

Seminar on selected topics.

Teaching Schedule

a) Theory

Lecture No.	Topic/Lesson	Weightages
1, 2	Definition of agricultural finance – nature – scope - meaning - significance - micro & macro finance	4
3, 4	Credit needs in agriculture – meaning and definition of credit - classification of credit based on time, purpose, security, lender and borrower	8
5, 6	Credit analysis - Economic feasibility tests- Returns to investment, Repayment capacity and Risk bearing ability (3Rs)	8
7, 8	Five Cs of credit - Character, Capacity, Capital, Condition and Common sense and Seven Ps of credit - Principle of productive purpose, Principle of personality, Principle of productivity, Principle of phased disbursement, Principle of proper utilization, Principle of payment and Principle of protection	6
9, 10	Methods and mechanics of processing loan application.	5
11, 12	Repayment plans: Lump sum repayment /straight-end repayment, Amortized decreasing repayment, Amortized even repayment, Variable or quasi variable repayment plan, Future repayment plan and Optional repayment plan	6
13, 14	Recent trends in agricultural finance - Social control and Nationalization of Banks	5
15, 16	Lead Bank Scheme – origin – objectives - functions and progress; Regional Rural Banks (RRBs) – origin – objectives – functions – progress - RRBs in Andhra Pradesh	8
17, 18	Crop Loan System: objectives – importance - scale of finance – estimation – Term Loans – objectives and interest rates, kisan credit card	8
19, 20	Schemes for financing weaker sections - Differential Interest Rate (DIR), Integrated Rural Development Programme (IRDP), Ganga Kalyan Yozana (GKY), Swarnajayanti Gram Swarozgar Yojana (SGSY), Self Help Groups etc.	8

Lecture No.	Topic/Lesson	Weightages
21, 22	Crop Insurance - meaning and its advantages - progress of crop insurance scheme in India - limitations in application - Agricultural Insurance Company of India – National Agricultural Insurance scheme (NAIS) - salient features - Weather insurance	5
23,24 & 25	Higher Financing Agencies - Reserve Bank of India (RBI) - origin – objectives and functions - role of RBI in agricultural development and finance; National Bank for Agricultural and Rural Development (NABARD) - origin, functions, activities and its role in agricultural development; International Bank for Reconstruction and Development (IBRD); International Monetary Fund (IMF); International Development Agency (IDA); Asian Development Bank (ADB); Deposit Insurance and Credit Guarantee Corporation of India	8
26	Co-operation – meaning - scope, importance and definition - principles - objectives of co-operation	6
27, 28	Origin and history of Indian cooperative movement – cooperative movement during pre-independence period - progress of cooperative movement during post-independence period	4
29, 30	Short comings of Indian co-operative movement and remedies - recommendations of various committees – development of cooperative credit and non-credit organizations- co-operative credit structure	4
32, 32	Classification of co-operative credit institutions - Short Term (ST), Medium Term (MT) and Long Term (LT) Credit – Primary Agricultural Cooperative Credit Societies (PACS) - Farmers Service Societies (FSS) - Multi-Purpose Cooperative Credit Societies (MPCS) and Large-Sized Adivasi Multipurpose Cooperative Societies (LAMPS) - Objectives and functions - Reorganization of Rural Credit Delivery System and concept of single window system – Andhra Pradesh mutually aided Co-operative Societies Act,1995	7
	Total	100

b) Practical

Exercise No	Topics
1	Working out the various repayment plans
2	Study of commercial banks/ RRB
3	Study of NABARD
4	Study of PACS/ DCCB
5	Study of SHGs
6	Estimation of scale of finance
7	Estimation of indemnity
8	Estimation of credit limits under Kisan Credit Card
9	Study of FSS
11	Study of Dairy co-operatives/ any other co-operative institution
12	Appraisal of loan proposal-A case study
13	Techno-Economic parameters for preparation of projects
14	Preparation of bankable projects for various agricultural products and its value added products
15	Seminar on selected topics
16	Final Practical Examination

Suggested Readings:

- 1) Ghosal, S.N., Agricultural Financing in India, Asia Publishing House, Bombay, 1966
- 2) Johl, S.S. and C.V. Moore., Essentials of Farm Financial Management, Today and Tomorrow's Printers and Publishers, New Delhi, 1970
- 3) John, J. Hampton., Financial Decision Making: Concepts, Problems and Cases, Prentice-Hall of India, New Delhi, 1983
- 4) Kenneth, Duft D., Principles of Management in Agribusiness, Reston Publishing Company, Reston, 1979

- 5) Mamoria, C.B. and R.D. Saksena., Co-operation in India, Kitab Mahal, Allahabad, 1973
- 6) Mamoria, C.B. and Saksena., Agricultural Problems in India, Kitab Mahal, Allahabad
- 7) Mukhi, H R. Cooperation in India and Abroad. New Heights Publishers, New Delhi, 1983
- 8) Muniraj, R., Farm Finance for Development, Oxford & IBH Publishing Company Private Ltd., New Delhi, 1987
- 9) Subba Reddy, S. and P.Raghuram., Agricultural Finance and Management, Oxford & IBH Publishing Company Private Ltd., New Delhi, 2005
- 10) Subba Reddy, S., P.Raghuram., P. Sastry, T.V.N. and Bhavani Devi I. Agricultural Economics., Oxford & IBH Publishing Company Private Ltd., New Delhi, 2010
- 11) William, G. Murray and Nelson Aarson, G., Agricultural Finance, The Iowa State University Press, Ames, Iowa, 1960

Course :	ECON 353		Credit:	3(2+1)	Semester-V
Course title:	Agricultural Marketing Trade and Prices				

Syllabus

Theory

Agricultural Marketing: Concepts and definitions of market, marketing, agricultural marketing, market structure, marketing mix and market segmentation, classification and characteristics of agricultural markets; demand, supply and producer's surplus of agri-commodities: nature and determinants of demand and supply of farm products,

Producer's surplus – meaning and its types, marketable and marketed surplus, factors affecting marketable surplus of agri-commodities; product life cycle (PLC) and competitive strategies: Meaning and stages in PLC; characteristics of PLC; strategies in different stages of PLC; pricing and promotion strategies: pricing considerations and approaches – cost based and competition based pricing; market promotion – advertising, personal selling, sales promotion and publicity – their meaning and merits & demerits; marketing process and functions:

Marketing process-concentration, dispersion and equalization; exchange functions – buying and selling; physical functions – storage, transport and processing; facilitating functions – packaging, branding, grading, quality control and labeling (Agmark); Market functionaries and marketing channels: Types and importance of agencies involved in agricultural marketing; meaning and definition of marketing channel; number of channel levels; marketing channels for different farm products; Integration, efficiency, costs and price spread: Meaning, definition and types of market integration; marketing efficiency; marketing costs, margins and price spread; factors affecting cost of marketing; reasons for higher marketing costs of farm commodities; ways of reducing marketing costs;

Role of Govt. in agricultural marketing: Public sector institutions- CWC, SWC, FCI, CACP & DMI – their objectives and functions; cooperative marketing in India; Risk in marketing: Types of risk in marketing; speculation & hedging; an overview of futures trading; Agricultural prices and policy: Meaning and functions of price; administered prices; need for agricultural price policy;

Trade: Concept of International Trade and its need, theories of absolute and comparative advantage. Present status and prospects of international trade in agri-commodities; GATT and WTO; Agreement on Agriculture (AoA) and its implications on Indian agriculture; IPR.

Practical

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

Teaching Schedule

a) Theory

Lecture	Topic/Lesson	Weightage
1	Market and Marketing – Meaning – Definitions – Components of market – Market structure – Meaning – Components – Market conduct – Market performance	2
2	Agricultural Marketing – Meaning – Definition – Scope – Subject matter – Importance of Agricultural Marketing in economic development.	2
3	Classification of markets – On the basis of location, Area of coverage, time span, volume of transaction, nature of transaction, number of commodities, degree of competition, nature of commodities, stage of marketing, extent of public intervention, type of population served, accrual of marketing margins	4
4	Marketing mix and market segmentation,	2
5	Demand, supply and producer's surplus of agri-commodities: nature and determinants of demand and supply of farm products,	2
6	Producers surplus- Meaning- Marketable surplus- Marketed surplus-importance- factors influencing marketable surplus-	3

Lecture	Topic/Lesson	Weightage
	Marketing channels - Definition	
7	Product life cycle (PLC) and competitive strategies: Meaning and stages in PLC; characteristics of PLC;	4
8	Strategies in different stages of PLC; pricing and promotion strategies:	3
9	Pricing considerations and approaches –cost based and competition based pricing;	3
10	Market promotion – advertising, personal selling, sales promotion and publicity – their meaning and merits & demerits;	4
11	Marketing process and functions: Marketing process-concentration, dispersion and equalization;	3
12	Marketing functions – Meaning -exchange functions – buying and selling;	2
13	Physical functions – storage, transport and processing	3
14	Facilitating functions – packaging, branding, grading, quality control and labeling (Agmark);	4
15	Market functionaries and marketing channels: Types and importance of agencies involved in agricultural marketing;	5
16	Meaning and definition of marketing channel; number of channel levels; marketing channels for different farm products;	4
17	Market integration-definition-types of market integration-horizontal, vertical and conglomeration-	4
18	Marketing efficiency-meaning-definitions-technical or physical or operational efficiency-pricing or allocative efficiency	5
19	Marketing cost-margins-price spread-factors affecting the costs of marketing-reasons for higher marketing costs of agricultural commodities- ways of reducing marketing costs for farm products.	3
20	Role of Govt. in agricultural marketing- Remedial measures-Regulated markets-definition-important features of regulated markets, functions, progress and defects	4
21	Public sector institutions- Warehousing-meaning- warehousing in India - Central Warehousing Corporation(CWC)- working of warehouses -advantages- State Warehousing Corporations (SWC)- Food Corporation of India(FCI)-objectives- functions	3
22	Characteristics of agricultural product prices-agricultural price stabilization-need for agricultural price policy- commission for Agricultural cost and Prices (CACP)- administered prices-	3

Lecture	Topic/Lesson	Weightage
	minimum support price, procurement price and issue price.	
23	Cooperative marketing- meaning-structure- Functions of cooperative marketing societies-.	2
24	National Agricultural Cooperative Marketing Federation (NAFED) and State Agricultural Cooperative Marketing Federations (MARKFED)- State Trading-objectives-Types of state trading.	4
25	Risk in marketing: Types of risk in marketing;	3
26	Speculation & hedging; an overview of futures trading;	2
27	Characteristics of agricultural product prices-agricultural price stabilization-need for agricultural price policy- commission for Agricultural cost and Prices (CACP)- administered prices- minimum support price, procurement price and issue price	4
28	Trade: Concept of International Trade and its need, International trade-definition-difference between international and inter-regional trade- free trade vs protection.	3
29	Theories of absolute and comparative advantage.	3
30	Present status and prospects of international trade in agri-commodities; GATT and WTO;	2
31	Agreement on Agriculture (AoA) and its implications on Indian agriculture;Trade Related Intellectual Property Rights(TRIPS)	2
32	Market and Marketing – Meaning – Definitions – Components of market – Market structure – Meaning – Components – Market conduct – Market performance	3
	Total	100

b) Practical

Exercise	Topic
1	Plotting and study of demand and supply curves
2	Calculation of elasticities
3	Study of relationship between market arrivals and prices of some selected commodities
4	Computation of marketable and marketed surplus of important commodities
5	Study of price behaviour over time for some selected commodities;
6	Visit to a local market to study various marketing functions performed by

	different agencies,
7	Visit to regulated market
8	Identification of marketing channels for selected commodity
9	Collection of data regarding marketing costs, margins and price spread.
10	Presentation of report in the class.
11	Visit to market institution – NAFED to study their organization and functioning.
12	Visit to SWC to study their organization and functioning.
13	Visit to CWC to study their organization and functioning.
14	Visit to cooperative marketing society to study their organization and functioning.
15	Application of principles of comparative advantage of international trade.
16	Final practical exam.

Suggested Readings:

- 1) Acharya S.S and Agarwal NL, 2006, Agricultural Marketing in India. Oxford & IBH Publishing Co.Pvt.Ltd. New Delhi
- 2) Kahlon, A.S and Tyagi.D S, 1983 Agricultural Price Policy in India. Allied Publishers Pvt. Ltd., New Delhi.
- 3) Kulkarni, K R.1964, Agricultural Marketing in India. The Co-operators Books Depot, Mumbai.
- 4) Mamoria, C.B. and Joshi. R L.1995, Principles and Practices of Marketing in India, Kitab Mahal, Allahabad
- 5) Mamoria, C.B., 1973., Agricultural Problems in India, Kitab Mahal, Allahabad
- 6) Subba Reddy, S., P.Raghu Ram., P. Sastry, T.V.N. and Bhavani Devi I. 2010. Agricultural Economics., Oxford & IBH Publishing Company Private Ltd., New Delhi, 2010

Course :	ELE ECON 354		Credit:	3(2+1)	Semester-V
Course title:	Agribusiness Management				

Syllabus

Theory

Transformation of agriculture into agribusiness, various stakeholders and components of agribusiness systems. Importance of agribusiness in the Indian economy and New Agricultural Policy. Distinctive features of Agribusiness Management: Importance and needs of agro-based industries, Classification of industries and types of agro based industries. Institutional arrangement, procedures to set up agro based industries. Constraints in establishing agro-based industries. Agri-value chain: Understanding primary and support activities and their linkages. Business environment: PEST & SWOT analysis. Management functions: Roles & activities, Organization culture. Planning, meaning, definition, types of plans. Purpose or mission, goals or objectives, Strategies, policies procedures, rules, programs and budget. Components of a business plan, Steps in planning and implementation. Organization staffing, directing and motivation. Ordering, leading, supervision, communications, control. Capital Management and Financial management of Agribusiness. Financial statements and their importance. Marketing Management: Segmentation, targeting & positioning. Marketing mix and marketing strategies. Consumer behavior analysis, Product Life Cycle (PLC). Sales & Distribution Management. Pricing policy, various pricing methods. Project Management definition, project cycle, identification, formulation, appraisal, implementation, monitoring and evaluation. Project Appraisal and evaluation techniques.

Practical

Study of agri-input markets: Seed, fertilizers, pesticides. Study of output markets: grains, fruits, vegetables, flowers. Study of product markets, retail trade commodity trading, and value added products. Study of financing institutions- Cooperative, Commercial banks, RRBs, Agribusiness Finance Limited, NABARD. Preparations of projects and Feasibility reports for agribusiness entrepreneur. Appraisal/evaluation techniques of identifying viable project- Non-discounting techniques. Case study of agro-based industries. Trend and growth rate of prices of agricultural commodities. Net present worth technique for selection of viable project. Internal rate of return.

Teaching Schedule

a) Theory

Lecture	Details of Topic	Weightage
1	Agribusiness: Meaning of Agribusiness, Definition of Agribusiness, Transformation of agriculture into agribusiness, Various stakeholders and components of Agribusiness systems. Agricultural Input Sector, Production Sector, Processing Manufacturing Sector, Distribution-Marketing Sector.	5
2, 3 & 4	Importance of Agribusiness in Indian Economy New Agricultural Policies National Agril. Policy, National Seed Policy, National Price Policy, National Food Processing Policy, National Foreign Trade Policy, National Fishery Policy, National Food Security Policy, National Food & Biotech, National Transportation of Food, National Nutrient Based Subsidy	4
5 & 6	Agro-based Industries: Importance of Agro based Industries ,Need of Agro based Industries, Classification of Agro based Industries, Types of Agro based Industries- Sugar Mills, Cotton Ginning Mills, Dal Mills, Rice Mills, Poha Mills, Fruit Processing Industries etc. Institutional Arrangement- Ministry of Agriculture (GOI), Financial Institutions, NABARD, NCDC, NDDB, NCUI, APEDA, ICAR, NAFED, FCI, CWC, NHM, CFTRI, EPO	7
7	Procedure to set up agro-based Industries Constraints in establishing Agro based Industries	4
8 & 9	Agricultural Value Chain : Value Chain Concept Primary activities and support activities and their linkages, Supply Chain v/s. Value Chain, Vertical Corporation, Horizontal relation, Nature of Association. Business Process and Agribusiness Supply Chain- Production, Processing/Manufacturing, Wholesaling, Retailing, Logistics, Supply Network	5
10	Business Environment PEST Analysis(Political, Economic, Social & Technological) SWOT Analysis (Strengths, Weaknesses Opportunities and Threats)	3
11	Management Functions: Role and Activities, Organization Culture, Functions of Management- Planning, Organizing, Directing, Controlling, Coordinating, Financing	2
12	Planning Meaning, Definition of Planning, Function of Planning, Types of Plan/Planning Process- Purpose, Objective, Policies, Procedure,	4

Lecture	Details of Topic	Weightage
	Practices, Characteristics of Sound Plan	
13	Rules, Programmes and Budget for Planning Components of Business Plan	3
14	Steps in Planning and Implementation Gathering Facts, Analyzing Facts, Forecasting Change, Setting Goals & Results, Developing Alternatives, Evaluating Progress	4
15	Organization- Meaning, Legal Structure, Sole Proprietorship, Creating a sole Proprietorship, Advantages & Disadvantages Partnership- Creating Partnership, Characteristics of Partnership Corporation- Creating Corporation, Characteristics of Corporation, Limited, Liability, Continuity of Operation, Tax Aspects, Estate Planning	4
16	Organization Structure – Responsibility, Authority, Accountability Directing : Meaning, Objective of Directing, Personnel Management, Finding OR Recruiting People, Selecting the Right Person, Job Orientation, Compensation & Fringe Benefits, Evaluating performance, Training & Development, Promotion & Advancement, Terminations & dismissal	5
17	Motivation : Meaning, Different ideas for Managing & Motivating People, Mallow's Need Hierarchy, Motivators & Hygienic Factors	3
18	Controlling : Meaning and Concept, Ordering : Meaning and Concept Leading : Meaning and Concept, Supervision : Meaning and Concept Communication : Meaning and Concept	2
19 & 20	Capital Management and Financial Management Definition of capital, Types of capital, Assess capital, Shares, Debentures, Ploughing back of earnings, Managing agent, Public deposit, Hire purchase, Leasing, Trade credit Importance of Capital and Financial Management Balance Sheet- Meaning, Concept, Importance, Precautions in preparing the balance sheet of business farm Study of different test Ratios- Current Ratio, Intermediate Ratio, Net Capital Ratio, Current Liability Ratio, Debt Equity Ratio, Equity Value Ratio	6
21	Profit & Loss Statement- Meaning, Concepts, Hypothetical Form of	4

Lecture	Details of Topic	Weightage
	Profit & Loss Statement, Study of different Financial Test Ratio- Capital turnover Ratio, Rate of return on investment, Net Farm Income, Net return to total capital	
22 & 23	Marketing Management: Meaning of Marketing, Definition of Marketing, Concepts of Marketing- Exchange concept, Product Concept, Marketing Myopia, Sales Concept, Difference between Marketing and Selling, Features of Marketing Concept- Consumer Orientation, Integrated Management Action, Consumer Satisfaction. Realizing the organizations goals including profit	7
24	Marketing Mix : Meaning, 4 Ps of Marketing, Product Variable, Place Variable, Price Variable, Promotion Variables. Marketing Strategies. Consumer behaviour analysis	4
25 & 26	Market Segmentation - Meaning and concept of Market Segmentation, Importance Role of Market Segmentation, Methods of Market. Product Life Cycle : Meaning, Stages of Product Life Cycle, Market Pioneering stage, Market growth stage, Market Maturity stage, Market decline stage. Sales and Distribution Management : Meaning, Management of Sales and Distributions, Price Policy -Meaning of Price Policy, Objectives of Price Policy, Pricing Methods, Prices at various stages of Marketing	7
27 & 28	Project : Meaning of Project, Definition of Project, Concept of Project, Types of Agricultural Projects- Water Resource Development Projects, Agricultural Credit Projects, Agricultural Development Projects, Agro-Industries & commercial Development Project. Phases in Project Cycle :Conception OR Identification, Formulation OR Preparation of the Project, Appraisal OR Analysis, Implementation, Monitoring, Evaluation, Criteria for selection of Agricultural Projects	7
29 & 30	Methods of Project Appraisal: Undiscounted Measures-Payback Period, Proceeds per Rupee of Outlay, Average, Annual Proceeds of Rupee Outlay. Discounted Measures- Net Present worth (NPW), Benefit Cost Ratio (B:C Ratio), Internal rate of Return (IRR), Profitability Index, Appropriate Selection of Choice Indicator. Sensitivity Analysis	6
31 & 32	Guide lines for project preparation report- Summary & Conclusion, Introduction ,Back ground, Project Rationale, Project Area, The Project, Organization & management, Production, Markets & Financial results, Benefits & Justification. Outstanding Issues Preparation of Project reports for various Activities in agriculture & allied sectors : Dairying, Poultry, Fisheries, Agro-Industries, etc.	4
	Total	100

b) Practical

Exercise	Title of Exercise
1.	Study of Input Market : Seed Fertilizer, Pesticides
2.	Study of Output market : Grain, Fruits, Vegetable, Flower
3.	Study of Product Market : Retail trade commodity trading, value added products
4.	Study of Financing Institutions, Co-operatives, Commercial Banks
5.	Study of Regional Rural Bank
6.	Study of Agribusiness Finance Limited
7.	Study of NABARD
8.	Study of Financial Criteria for appraisal of the Project
9.	Appraisal of Irrigation Project
10.	Study of Financial Test Ratios for Evaluation Agro based Industries
11.	Study of Methods of Project Evaluation
12.	Case study of Agro based Industries
13.	Visit to Financial Institution
14.	Study on E-Commerce of Agricultural Commodities
15.	Visit to Export Market of Fruits/Vegetables/Flowers/Grains
16.	Visit to Processed Industries/Malls/Producer's Companies

Suggested Readings:

- 1) Agribusiness Management by Dr. Shivaji Nagpure & Dr. R.G. Deshmukh, M/s. AGROMET Publishers, Nagpur.
- 2) Indian Agriculture & Agri-Business Management by Dr. Smita Diwase, M/s. Scientific Publishers, Jodhpur, Rajasthan.
- 3) Agricultural Finance & Management by S. Subha Reddy, & P. Raghu Ram, M/s. Oxford IBH Publishing Co. Pvt. Ltd., New Delhi.
- 4) Agri Business Management by Dr. J.S. Amarnath & Dr. A.P.V. Samvel, M/s. Satish Serial Publishing House, Delhi-110033.
- 5) The Agribusiness Book by Mukesh Pandey, Deepali Tewari, M/s. ibdc Publishers, Lukhnow (U.P.), Pin-226 001.
- 6) Economics analysis of Agricultural Projects by J. Price Gittinger, M/s. The Economics Development Institute/World Bank, Washington D.C.-20433, U.S.A.

