Programme code GECO 21

Programme name M.B.A. (Agri.Business)

Programme Outcomes

Any post graduate from the Faculty of Agriculture will

PO1. have core knowledge leading to awareness on advancements in the field of agriculture and horticulture including crop production, soil fertility, crop protection, crop improvement, microbiology, bio technology, agricultural extension and economics.

PO2. have basic understanding and skill on experimental tools in biological sciences, analytical techniques for plant and soil samples, microbial technologies, biotechnological tools, breeding methods, statistical tools & analysis, research data computation, etc, required for higher learning, research and development.

PO3. be mastering the modern agronomic techniques of crop production, water, soil & nutrient management, plant protection with respect to insect pest and plant diseases , crop improvement and ecosystem restoration.

PO4. will be able to design and execute individual research project, write concise & persuasive research articles and communicate effectively with their scientific colleagues, farmers and the general public.

PO5. be able to communicate research and educational materials properly and competently and

PO6. be able to address complex problems taking into account related ethical, social, legal, economic, and environmental issues.

Programme Specific Outcomes

PSO1. The M.B.A (Agribusiness) programme will prepare the students to meet the challenges of the dynamic business environment by imparting pragmatic managerial skills which are incorporated in the curriculum.

PSO2. This will help the Agri management graduates to have an edge over the regular management graduates in their corporate business performance.

PSO3. This programme will also motivate the Agri business graduates to take up self employment ventures as successful entrepreneurs.

PSO4. This programme will kindle the student's aptitude for novel and futuristic research thus they will imbibe the passion for pursuing Ph.D. whereby their prospects for recruitment as teaching faculties (Assistant Professors) will become bright.

Department of Agricultural Economics
M.B.A. (Agri Business) Degree Programme
Distribution of Courses

Major - 21 Credits

S. No.	Course No.	Title	Credit Hr. T+P
1.	ABM 611	Principles of Management and Organizational Behaviour	2+0
2.	ABM 612	Managerial Economics	2+0
3.	ABM 613	Human Resource Management	2+0
4.	ABM 614	Production and Material Management	1+1
5.	ABM 615	Research Methodology in Business Management	1+1
6.	ABM 621	Agricultural Marketing Management	2+0
7.	ABM 622	Managerial Accounting and Control	1+1
8.	ABM 623	Agricultural Project Management	1+1
9.	ABM 624	Agribusiness Financial Management	2+0
10.	ABM 625	Operations Research	1+1
11.	ABM 626	Agri Business Environment, Business Law and Policy	1+0
		Total	**16+5=21**

Electives - 8 Credits

1.	ABM 711 E1	Logistics and Supply Chain Management	
2.	ABM 711 E2	Farm Business Management	2+0
3.	ABM 711 E3	Sales and Distribution Management in Agri Business	
4.	ABM 712 E1	Entrepreneurship Development	
5.	ABM 712 E2	Rural and Service Marketing	2+0
6.	ABM 712 E3	Food Retail Management	
7.	ABM 713 E1	Insurance and Risk Management	
8.	ABM 713 E2	Communication for Management and Business	2+0
9.	ABM 713 E3	Management of Agricultural Input Marketing	
10.	ABM 714 E1	International Trade and Sustainability Governance	
11.	ABM 714 E2	Commodity Futures Trading	2+0
12.	ABM 714 E3	Capital and Commodity Markets	
		Total	**8+0 = 8**

Supporting Courses - 5 Credits

1.	STA 613	Statistics for Business Management	2+1
2.	COM 611	Computer Applications for Agricultural Research	1+1
		Total	**3+2=5**
Seminar/In-plant Training/Study Tour/Project - 21 Credits			
1.	ABM 011; 021; 031	In-plant Training 011-0+2; 021-0+2; 031-0+2	0+6
2.	ABM 022; 032	Study Tour 022-0+1; 033-0+1	0+2
3.	ABM 033	Seminar	0+1
4.	ABM 034; 044	Project 034-0+4; 044-0+8	0+12
		Total	**0+21 = 21**
		Grand Total	**27+28=55**
Non Credit Compulsory Courses 8+ 4 = 12			
1.	PGS 611	Research Data Analysis	0+1
2.	PGS 612	Technical Writing and Communication Skills (English)	0+1
3.	PGS 623	Basic Analytical Techniques	0+1
4.	PGS 624	Library and Information Services (Library Science)	0+1
5.	PGS 715 (e-course)	Intellectual Property and its Management in Agriculture	1+0
6.	PGS 716 (e-course)	Disaster Management (Agronomy)	1+0
7.		Value Added Course	6+0
		Total	**8+4=12**

Department of Agricultural Economics
M.B.A. (Agri Business) Degree Programme
Semester - Wise Distribution

S. No.	Course Code	Title	Credit Hours
First Semester			
1.	ABM 611	Principles of Management and Organizational Behaviour	2+0
2.	ABM 612	Managerial Economics	2+0
3.	ABM 613	Human Resource Management	2+0
4.	ABM 614	Production and Material Management	1+1
5.	ABM 615	Research Methodology in Business Management	1+1
6.	STA 613	Statistics for Business Management	2+1
7.	COM 611	Computer Applications for Agricultural Research	1+1
8.	ABM 011	In-plant Training	0+2
9.	PGS 611 *	Research Data Analysis	0+1
10.	PGS 612 *	Technical Writing and Communication Skills (English)	0+1
		Total	**11+6 = 17**
Second Semester			
1.	ABM 621	Agricultural Marketing Management	2+0
2.	ABM 622	Managerial Accounting and Control	1+1
3.	ABM 623	Agricultural Project Management	1+1
4.	ABM 624	Agribusiness Financial Management	2+0
5.	ABM 625	Operations Research	1+1
	ABM 626	Agri Business Environment, Business Law and Policy	1+0
6.	ABM 021	In-plant Training	0+2
7.	ABM 022	Study Tour	0+1
8.	PGS 623 *	Basic Analytical Techniques	0+1
9.	PGS 624 *	Library and Information Services (Library Science)	0+1
		Total	**8+6 = 14**
Third Semester			
1.	EAM 711 E1, E2, E3	Elective course	2+0
2.	EAM 712 E1,E2,E3	Elective course	2+0
3.	EAM 713 E1,E2,E3	Elective course	2+0
4.	EAM 714 E1,E2,E3	Elective course	2+0
5.	ABM 031	In-plant Training	0+2
6.	ABM 032	Study Tour	0+1
7.	ABM 033	Seminar	0+1
8.	ABM 034	Project	0+4
9.	PGS 715 * (e-course)	Intellectual Property and its Management in Agriculture	1+0
10.	PGS 716 * (e-course)	Disaster Management (Agronomy)	1+0
11.		Value Added Course*	3+0
		Total	**8+8 = 16**
Fourth Semester			
1.	ABM 044	Project	0+8
2.		Value Added Course*	3+0
		Total	**0+8 = 8**
		Grand Total	**27+28 = 55**

*** Non Credit Compulsory Courses**

ABM 611 Principles of Management and Organizational Behaviour (2+0)

Learning Objectives

- To make the students understand the basic management concepts
- To identify the role of management practices in agri business
- to acquaint the learner with meaning and concepts of organizational behaviour

Theory

Unit-I : Basics in management

Nature, scope and significance of management - evolution of management thought - approaches to management - functions of a manager. Planning - types, steps, process, strategies, policies, MBO, strategic planning process, SWOT analysis. Organizing - structure and process, line staff, authority and responsibility.

Unit-II : Management functions

Staffing - selection process, span of control, delegation. Directing - training, communication and motivation. Controlling - significance, process, techniques, standards and benchmarks - management audits.

Unit-III : Basic organizational behaviour

Nature, scope and significance of organizational behaviour - evolution and historical background of organizational behaviour - models of organizational behaviour - foundations of individual behaviour - diversity. Micro organizational behaviour - personality, self-concept, self-esteem and self-efficacy, attitudes, perception, power - types and structures.

Unit-IV : Motivation and leadership

Motivation - types of motivation - theories of motivation - applications of motivation. Transactional analysis - interpersonal relations - understanding determinants and developing leadership styles and influence process. Leadership theories - types of leaders - effective leader. Group dynamics - types of groups - group formation - group decision making - team building.

Unit-V : Organizational culture

Organizational culture or climate - concepts, dimensions, ethos, determinants. Organizational conflicts - concepts, sources, implications and management. Organizational changes - types, resistances to change - role of change agents - organizational effectiveness - achieving organizational effectiveness.

Theory schedule

1. Nature, scope and significance of management
2. Evolution of management thought
3. Approaches to management
4. Functions of a manager
5. Planning - types, steps, process, strategies, policies
6. MBO, strategic planning process, SWOT analysis
7. Organizing - structure and process, line staff, authority and responsibility
8. Staffing - selection process
9. Span of control - delegation
10. Directing - training, communication and motivation
11. Controlling - significance, process, techniques
12. Standards and benchmarks, management audits
13. Nature, scope and significance of organizational behaviour
14. Evolution and historical background of organizational behaviour
15. Models of organizational behaviour
16. Foundations of individual behaviour - diversity
17. **Mid semester examination**
18. Micro organizational behaviour
19. Personality, self-concept, self-esteem and self-efficacy
20. Attitudes, perception, power - types and structures
21. Motivation - types of motivation
22. Theories of motivation
23. Applications of motivation
24. Transactional analysis

25. Interpersonal relations-understanding, determinants and developing leadership styles and influence process
26. Leadership theories
27. Types of leaders and effective leader
28. Group dynamics - types of groups, group formation
29. Group decision making, team building
30. Organizational culture or climate - concepts
31. Dimensions, ethos, determinants of organizational culture
32. Organizational conflicts - concepts, sources, implications and management
33. Organizational changes - types, resistances to change, role of change agents
34. Organizational effectiveness - achieving organizational effectiveness

Course outcome

At the end of the course students will be able to

1. Understand the current developments in management practices.
2. Identify and apply appropriate management techniques for managing contemporary organization.
3. Know how managers align the planning process with mission and vision.
4. Discuss organizational process from different theoretical perspectives.
5. Understand organizational conflicts and identify the way to achieve organizational effectiveness.

Reference books

1. Fred Luthans, 1998. *Organizational Behaviour*, Tata McGraw Hill, New Delhi.
2. Gupta, C.B., 2000. *Management Theory and Practice,* Sultan Chand and Sons, New Delhi.
3. Harold Koontz and Keing Weighhrich, *Essentials of Management*, McGraw Hill, New Delhi.
4. Prasad, L.M., 1998. *Principles and Practices of Management*, Sultan Chand and Sons, New Delhi.
5. Rao, V.S.B., and P.S. Narayana, 1998. *Principles and Practices of Management*, Konark Publishing Pvt. Ltd., New Delhi.
6. Singh, S.K., 2006. *Agricultural Management (Vol. I)*, Mittal Publications, New Delhi.
7. Stephen P Robbins, 2007. *Organizational Behaviour*, Prentice Hall, New Delhi.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2	X	X				X				
CO3				X		X				
CO4	X			X	X					
CO5	X	X								X

ABM 612 Managerial Economics (2+0)

Learning Objective

- To equip the students with the basic micro and macro- economic concepts
- To explain theories with special reference to agri -business
- To develop analytical skills of the students in solving agri -business problems

Theory

Unit-I : Managerial economics - introduction

Scope of managerial economics - objectives of the firm and basic economic principles - mathematical concepts used in managerial economics.

Unit-II : Demand analysis

Indifference curve - consumer's surplus. Demand analysis - meaning, types - determinants of demand - demand function - demand elasticity - demand forecasting techniques.

Unit-III : Production, cost concepts and supply functions

Diminishing marginal returns - profit maximization - production functions - least cost input combination - factor productivities and returns to scale. Cost concepts - cost output relationship - short and long run supply functions.

Unit-IV : Market structure and pricing analysis

Pricing - determinants of price - pricing under different market structures - pricing of joint products - pricing methods in practice. Barriers to entry - strategic versus structural, switching costs - network effects - capital requirements - learning curve - control of resources. Legal barriers - patents, copyrights, trademarks, licenses. Competitive advantage - positioning strategy - cartels - welfare cost of monopoly - government policies and pricing.

Unit-V : Macroeconomic concepts related to agri business

The national income - circular flow of income - consumption, investment and saving - money - functions - demand and supply - inflation - economic growth - business cycles and business policies - business decisions under uncertainty. **Current streams of thought**

Theory schedule

1. Scope of managerial economics
2. Objectives of the firm and basic economic principles
3. Mathematical concepts used in managerial economics
4. Indifference curve - consumer's surplus
5. Demand analysis - meaning, types
6. Determinants of demand
7. Demand function
8. Demand elasticity
9. Demand forecasting techniques
10. Diminishing marginal returns
11. Profit maximisation
12. Production functions
13. Least - cost input combination
14. Factor productivities and returns to scale
15. Cost concepts
16. Cost-output relationship
17. **Mid semester examination**
18. Short and long run supply functions
19. Pricing - determinants of price
20. Pricing under different market structures
21. Pricing of joint products - pricing methods in practice
22. Barriers entry - strategic versus structural, switching costs
23. Network effects - capital requirements
24. Learning curve - control of resources
25. Legal barriers - patents, copyrights, trademarks, licenses.
26. Competitive advantage - positioning strategy - cartels - welfare cost of monopoly
27. Government policies and pricing
28. The national income - circular flow of income
29. Consumption - investment and saving
30. Money - functions
31. Demand and supply

32. Inflation - economic growth
33. Business cycles and business policies
34. Business decisions under uncertainty

Course outcome

At the end of the course students will be able to

1. Understand the roles of managers in firm.
2. Analyze the demand and supply conditions.
3. Design competition strategies, including costing, pricing, product differentiation and market environment.
4. Analyse the decisions which are taken under different marketing structure.
5. Analyse the real world business problems with a systematic theoretical frame work.

Reference books

1. Dwivedi, D.N., 2002. *Managerial Economics*, Vikash Publication, New Delhi.
2. Gupta, G.S., 1997. *Managerial Economics*, Tata McGraw Hill, New Delhi.
3. Jhingan, M.L, 2001. *Macro Economic Theory*, Konark Publishers, Pvt. Ltd., Chennai.
4. Mehtha, P.L., 2000. *Managerial Economics - Analysis, Problems and Cases*, Sultan Chand and Sons, New Delhi.
5. Sankaran, 2001. *Business Economics*, Progressive Corporation Pvt. Ltd., Bombay.
6. http://cengagesites.com/academic/?site=5215
7. http://www.pearsonhighered.com/keat/

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X			X					
CO2	X	X				X				
CO3	X			X		X				
CO4		X		X						X
CO5		X		X						X

ABM 613 Human Resource Management (2+0)

Learning Objective

- To expose the learner to the field of human resource management
- To provide focus on human resource practices and their utility for managers

Theory

Unit-I : Introduction to human resource management

Introduction to human resource management - human resource planning - nature and significance - job analysis, job description, job specification, job enlargement, job enrichment, job rotation, job evaluation.

Unit-II : Recruitment and selection

Recruitment and selection process - induction. Training and human resource development - nature, significance process, techniques - strategic human resource management - process and techniques - internal mobility including transfers, promotions, employee separation - building employee commitment - promotion from within sources - induction.

Unit-III : Performance appraisal

Performance appraisal - significance and methods - compensation management - wage and salary administration - wage fixation, fringe benefits, incentive payment, bonus and profit sharing - 360 degree appraisal.

Unit-IV : Industrial relations

Industrial relations - role and status of trade unions - collective bargaining - worker's participation in management - career planning and employee retention - employee security.

Unit-V : Employee welfare measures

Quality of work life - employee welfare measures - disputes and grievance handling procedures - arbitration and adjudication - health and safety of human resource - human resource accounting - human resource outsourcing - talent management. **Current streams of thought**

Theory schedule

1. Introduction to human resource management
2. Human resource planning - nature and significance
3. Job analysis - job description
4. Job specification - job enlargement
5. Job enrichment - job rotation - job evaluation
6. Recruitment and selection process - induction
7. Training and human resource development - nature, significance, process and techniques
8. Strategic human resource management - process and technique
9. Internal mobility including transfers, promotions, employee separation
10. Building employee commitment
11. Promotion from within sources - induction
12. Performance appraisal - significance and methods
13. Compensation management
14. Wage and salary administration
15. Wage fixation - fringe benefits
16. Incentive payment, bonus
17. **Mid semester examination**
18. Profit sharing
19. 360 degree appraisal
20. Industrial relations
21. Role and status of trade unions
22. Collective bargaining
23. Worker's participation in management
24. Career planning
25. Employee retention
26. Employee security
27. Quality of work life
28. Employee welfare measures
29. Disputes and grievance handling procedures
30. Arbitration and adjudication
31. Health and safety of human resource

32. Human resource accounting
33. Human resources outsourcing
34. Talent management

Course outcome

At the end of the course students will be able to

1. Understand the importance of human resources and their effective management in organization.
2. Identify the current practice of recruitment.
3. Demonstrate the different performance measuring techniques.
4. Understand role and status of trade unions.
5. Indentify various welfare measures taken by agro industries for the benefit of their workers.

Reference books

1. Ashwathapa, K., 1997. *Human Resource Management*, Tata McGraw, New Delhi.
2. Garry, D., 2001. *Human Resource Management*, 7th Ed., Prentice-Hall of India, New Delhi.
3. Mamoria, C.B., 1996. *Personnel Management*, Himalaya Publication House, New Delhi.
4. Subba Rao, P., 2004. *Essentials of Human Resource Management and Industrial Relations*, Himalaya Publication House, New Delhi.
5. Venkantavatnam, C.S. and Srivastav B.K., 1991. *Personnel Management and Human Resources*, Tata McGraw-Hill, New Delhi.
6. www.ximb.ac.in/library/e-Resources1.html
7. www.hrmguide.com
8. www.humanresources.about.com
9. www.managementhelp.org/hr_mgmnt/hr_mgmnt.htm

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X			X					
CO2	X					X				
CO3				X		X				
CO4				X	X					
CO5		X		X				X		

ABM 614 Production and Material Management (1+1)

Learning Objective

- To expose the learner to the field of production and material management
- To impart knowledge of the basic concepts
- To explain tools and functions of production and material management

Theory

Unit-I : Introduction - production management

Production management - meaning, nature and scope - historical evolution - process planning - plant capacity - product design and development - make or buy decisions - use of cross over chart for selection processes - plant location - factors - multiplant location decision.

Unit-II : Production planning

Productivity variables and productivity measurement - production planning - types of plans - sales forecasting - economic batch quantity. Production control - scheduling - dispatching - routing - process control - flow control of materials - inspection - evaluation - line of balance.

Unit-III : Maintenance management

Maintenance management - objectives, types, maintenance schedule. Quality control - purpose - sampling by variables and attributes - work study - methods - work environment industrial safety - purpose of time study - stop watch time study.

Unit-IV : Material management

Nature and scope of material management - determinants of right materials - forecasting - purchase management - value analysis - purchase negotiations - vendor rating - costing and storing of materials - procurement methods and process techniques - indenting - planning - codification - quality specification - TQM, ISO standards and their importance - introduction to re-engineering - value engineering.

Unit-V : Inventory management

Inventory management - inventory models - control techniques - location of warehouses - stores - procedures - inspection - safety management - issues and reorders checking. **Current streams of thought**

Practical

Plant layout - types, factors - visit to an industrial plant - exercises on production management - case analysis on production management - exercise on production planning - control - case analysis on production planning - control - exercises on PERT - exercises on CPM - exercises on quality control - exercises on inventory management - vendor rating - EOQ - control systems - visit to organizations - presentation of case analysis.

Theory schedule

1. Production management - meaning, nature and scope - historical evolution
2. Process planning - plant capacity - product design and development
3. Make or buy decisions - use of cross over chart for selection processes
4. Plant location - factors - multiplant location decision
5. Productivity variables and productivity measurement - production planning - types of plans - sales forecasting - economic batch quantity
6. Production control - scheduling - dispatching - routing - process control - flow control of materials - inspection - evaluation - line of balance
7. Maintenance management - objectives, types, maintenance schedule
8. Quality control - purpose - sampling by variables and attributes - work study - methods - work environment industrial safety - purpose of time study - stop watch time study
9. **Mid semester examinations**
10. Nature and scope of material management
11. Determinants of right materials – forecasting
12. Purchase management - value analysis - purchase negotiations - vendor rating
13. Costing and storing of materials
14. Procurement methods and process technique
15. Indenting - planning - codification - quality specification - TQM, ISO standards and their importance - introduction to re-engineering, value engineering
16. Inventory management - inventory models - control techniques
17. Location of warehouse - stores - procedures - inspection - safety management - issues and reorders checking

Practical schedule

1. Plant layout - types - factors
2. Visit to an industrial plants
3. Case study on product planning
4. Exercises on production management
5. Case analysis on production management
6. Exercise on production planning
7. Case analysis on production planning - control
8. Exercises on PERT
9. Exercises on CPM
10. Exercises on quality control
11. Exercises on quality control (contd.)
12. Exercises on inventory management I - vendor rating
13. Exercises on inventory management II - EOQ
14. Exercises on inventory management III - control systems
15. Visit to organization related to agribusiness
16. Visit to organization related to agribusiness
17. Presentation of case analysis

Course outcome

At the end of the course students will be able to

1. Identify the scope for integrating materials management function over the logistics and supply chain operations.
2. Analyze the materials in storage, handling. Packaging. Shipping distribution and standardizing.
3. Identify various purchasing method and inventory controlling techniques
4. Analyse the materials in storage, handling, packing, shipping distributing and standardizing.
5. Identify various purchasing method and inventory controlling techniques.

Reference books

1. Alan Muhlemann, John Oakland and Keith Lockyer, 2000. *Production and Operations Management*, Macmillan India Ltd., New Delhi.
2. Chary, S.N., 2001. *Production and Operational Management*, Tata McGraw-Hill Publishing Company Ltd., New Delhi.
3. Gopalakrishnan, P and Sundaram. M., 2002. *Materials Management - An Integrated Approach*, Prentice Hall of India Ltd., New Delhi.
4. Lal, A.B., 2000. *Inventory Models and the Problems of Price Fluctuations*, Shree Publishing House, Bombay.
5. Verma, M.M., 2001. *Materials Managemen*t, Sultan Chand and Sons Educational Publishers, New Delhi.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X		X				
CO2		X	X					X		
CO3		X	X					X		
CO4	X			X		X				
CO5	X	X	X							X

ABM 615 Research Methodology in Business Management (1+1)

Learning Objectives

- To develop an understanding of research methodology
- To understand process and techniques of research

Theory

Unit-I : Research process

Meaning, types, and process of research - research methodology in management - exploratory, descriptive, experimental, diagnostic method - problem formulation, setting of objectives, formulation of hypotheses.

Unit-II : Data collection

Scales of measurement - nominal, ordinal, interval, ratio, likert scale and other scales - primary and secondary data - sources of data - instruments of data collection - data editing - classification - coding - validation - tabulation - presentation - analysis.

Unit-III : Sampling procedure

Concept of sampling, Sampling design - probability and non-probability sampling techniques including simple random sampling, stratified sampling, multi-stage sampling, systematic sampling, purposive sampling, quota sampling, judgment sampling, and convenience sampling - sample size determination - sampling and non-sampling errors.

Unit-IV : Tools of analysis

Role and uses of quantitative techniques in business decision making - use of equations - use of determinants and matrices in business decisions - frequency distribution - measures of central tendency - measures of variation - skewness and kurtosis - simple, partial, and multiple correlation - rank correlation - simple and multiple regression - discriminant and dummy variable analysis.

Unit-V : Report writing

Index numbers - hypothesis testing - ANOVA - factor analysis - cluster analysis - conjoint analysis - multi-dimensional analysis. Report writing - types of reports, essentials and contents of good report writing.

Practical

Exercises in problem identification. Project proposals - contents and scope. Formulation of objective and hypotheses. Assessment of data needs - sources of data - methods of collection of data. Methods of sampling - criteria to choose - discussion on sampling under different situations. Scaling techniques - measurement of scales. Preparation of interview schedule - field testing. Methods of conducting survey. Exercises on coding, editing, tabulation and validation of data. Preparing of data entry into computer. Hypothesis testing. Parametric and non-parametric tests. Exercises on format for thesis / report writing. Presentation of the results.

Theory schedule

1. Meaning, types, and process of research - research methodology in management - exploratory, descriptive, experimental, diagnostic methods
2. Problem formulation - setting of objectives, formulation of hypotheses
3. Scales of measurement - nominal, ordinal, interval, ratio - likert scale and other scales
4. Primary and secondary data - sources of data - instruments of data collection
5. Data editing, classification, coding, validation, tabulation, presentation, analysis
6. Concept of sampling - sampling design - probability and non-probability sampling techniques including simple random sampling, stratified sampling
7. Multi-stage sampling, systematic sampling, purposive sampling, quota sampling, judgment sampling, and convenience sampling
8. Sample size determination, sampling and non-sampling errors
9. **Mid semester examination**
10. Role and uses of quantitative techniques in business decision making - use of equations
11. Use of determinants and matrices in business decisions
12. Frequency distribution, measures of central tendency
13. Measures of variation, skewness and kurtosis, simple, partial, and multiple correlation, rank correlation
14. Simple and multiple regression, discriminant and dummy variable analysis
15. Index numbers, hypothesis testing, ANOVA
16. Factor analysis, cluster analysis, conjoint analysis, multi-dimensional analysis etc
17. Report writing: types of report, essentials and contents of good report writing

Practical schedule

1. Exercises in problem identification
2. Project proposals - contents and scope
3. Formulation of objective and hypotheses
4. Assessment of data needs - sources of data - methods of collection of data
5. Methods of sampling - criteria to choose
6. Discussion on sampling under different situations - scaling techniques
7. Measurement of scales
8. Preparation of interview schedule
9. Field testing
10. Methods of conducting survey
11. Exercises on coding, editing, tabulation and validation of data
12. Preparing of data entry into computer
13. Hypothesis testing
14. Parametric tests
15. Non-parametric tests
16. Exercises on format for thesis / report writing
17. Presentation of the results

Course outcome

At the end of the course students will be able to

1. Grasp the significance of literature study, case study and structured surveys in agri business research.
2. Know the different methods to collect data and coding of data.
3. Determine the appropriate sample size and sampling methods.
4. Select the variable related to research problem and to analyse using econometric methods.
5. Test the hypothesis and write the research report.

Reference books

1. Cooper D.R and Schindler P.S., 2006. *Marketing Research Concepts and Cases*, Tata McGraw Hill, New Delhi.
2. Dwivedi D.N., 2002. *Managerial Economics*, Vikash Publication, New Delhi.
3. Gupta G.S., 1997. *Managerial Economics*, Tata McGraw Hill, New Delhi.
4. Jhingan, M.L, 2001. *Macro Economic Theory*, Konark Publishers, Pvt. Ltd., Chennai.
5. Mehtha P.L., 2000. *Managerial Economics - Analysis, Problems and Cases*, Sultan Chand and Sons, New Delhi.
6. Sankaran, 2001. *Business Economics*, Progressive Corporation Pvt. Ltd., Bombay.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X		X				
CO2		X	X			X				
CO3	X		X					X		
CO4			X	X						X
CO5		X		X						X

ABM 621 Agricultural Marketing Management (2+0)

Learning Objective

- To impart the students an understanding of concepts
- To identify various policies, strategies and decisions relating to agricultural marketing management

Theory

Unit-I : Introduction to marketing management

Meaning and scope - agricultural marketing and economic development. Agricultural market structure - meaning, components and dynamics of market structure. Marketing strategy - meaning and significance - formulation of marketing strategy. Agribusiness marketing environment - design of marketing mix - market segmentation and targeting.

Unit-II : Customer behaviour and competitive strategies

Building customer value - satisfaction and loyalty. Consumer behaviour - meaning, factors influencing consumer behaviour and stimuli response model. Organizational buying - participants, process, managing business to business customer relationships. Identifying and analyzing competition - benchmarking and competitive strategies. Brand management - stategy, extensions and portfolio.

Unit-III : Product management

Product management - product management process - decisions - new product development - significance and classification of new product - stages and estimation of demand of new product - product life cycle.

Unit-IV : Pricing policies and promotional management

Pricing policies and practices for agribusiness - determinants of price - objectives of pricing policies and pricing methods. Marketing communication - objectives, factors. Promotional management - advertising, planning and execution - sales promotion, grading and standardization.

Unit-V : Distribution management

Distribution management - storage, warehousing and transportation management for agricultural products - marketing agencies/intermediaries - roles and functions. Distribution channels involved in agribusiness. **Current streams of thought**

Theory schedule

1. Meaning and scope - agricultural marketing and economic development
2. Agricultural market structure - meaning, components
3. Dynamics of market structure
4. Marketing strategy - meaning and significance, formulation of marketing strategy
5. Agribusiness marketing environment
6. Design of marketing mix
7. Market segmentation and targeting
8. Determinants of consumer's behaviour
9. Building customer value, satisfaction and loyalty
10. Consumer behaviour - meaning, factors influencing consumer behaviour
11. Stimuli response model
12. Organizational buying - participants, process, managing business to business customer relationships
13. Identifying and analyzing competition
14. Benchmarking and competitive strategies
15. Brand management - strategy, extensions and portfolio
16. Product management
17. **Mid semester examination**
18. Product management process - decisions
19. New product development
20. Significance and classification of new product
21. Stages and estimation of demand of new product
22. Product life cycle
23. Pricing policies and practices for agribusiness
24. Determinants of price
25. Objectives of pricing policies and methods
26. Marketing communication - objectives, factors
27. Promotional management - concepts

28. Advertising, planning and execution
29. Sales promotion, grading and standardization
30. Distribution management
31. Storage and warehousing management for agricultural products
32. Transportation management for agricultural products
33. Marketing agencies/intermediaries - roles and functions
34. Distribution channels involved in agribusiness

Course outcome

At the end of the course students will be able to

1. Formulate a marketing plan.
2. Construct strategies for the efficient distribution of agricultural products and services by knowing consumer behaviour.
3. Determine strategies for developing new products and services that are consistant with evolving market needs.
4. Evaluate results of marketing activities.
5. Analyse various channels involved in agribusiness for effective distribution of goods.

Reference books

1. Acharya, S.S. and Agarwal N.L., 2004. *Agricultural Marketing in India*, 4th Ed., Oxford and IBH, New Delhi.
2. Kohls, R.L. and Uhj J.N., 2005. *Marketing of Agricultural Products*, 9th Ed., Prentice Hall, New Delhi.
3. Kotler, P., 2002. *Marketing Management - Analysis, Planning, Implementation and Control*, Pearson Edu., New Delhi.
4. Krishnamacharyulu, C. and Ramakrishan L., 2002. *Rural Marketing*, Pearson Edu., New Delhi.
5. Ramaswamy, V.S. and Nanakumari S., 2002. *Marketing Management*, 2nd Ed., Mac Millan India, New Delhi.
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	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X	X	X	X					
CO2	X	X				X				
CO3		X	X	X		X				
CO4				X				X		
CO5			X							X

ABM 622 Managerial Accounting and Control (1+1)

Learning Objective

- To expose the learner to the concept and methods of management accounting
- To understand techniques, uses and applications of management accounting

Theory

Unit-I : Financial accounting

Financial accounting - meaning, need, principles, concepts and conventions - branches of accounting - internal and external users of accounting - advantages and limitations of financial accounting - accounting standards.

Unit-II : Journal entry

The double entry system - its meaning and scope - the journal - cash book - ledger - trial balance - trading account - profit and loss account - balance sheet - entries and adjustments of different heads in different books and accounts. Introduction to company accounts.

Unit-III : Management accounting

Managing accounting - meaning, functions, scope, utility - limitations and tools of management accounting - analysis of financial statements - ratios - comparative and common size statements - cash flow and funds flow analysis - management audit and financial audit.

Unit-IV : Cost accounting

Cost accounting - nature, significance of cost accounting - classification of cost - costing for material, labour and overheads - marginal costing. Break even analysis - Cost volume profit analysis - its significance, uses and limitations. Standard costing - its meaning, uses and limitations - determination of standard cost - variance analysis - material, labour and overhead.

Unit-V : Budgeting

Responsibility accounting - its meaning and significance - cost profit and investment centers - accounting for price level changes - concepts - CPP and CCA methods. Budget and budgetary control - its meaning, uses and limitations - budgeting and profit planning - different types of budgets and their preparations - sales budget, purchase budget, production budget, cash budget, flexible budget, master budget, zero based budgeting. **Current streams of thought**

Practical

Preparation of journal - ledger - day book. Preparation of balance sheet - financial ratio analysis - income statement - depreciation methods - comparative statement - trend analysis - percentage analysis - standard costing - variance analysis - break even analysis - analysis of case studies - cash budget analysis - port folio management - investment analysis - capital market operations analysis - case studies.

Theory schedule

1. Financial accounting - meaning, need, principles
2. Concepts and conventions - branches of accounting - internal and external users of accounting
3. Advantages and limitations of financial accounting - accounting standards
4. The double entry system - its meaning and scope - the journal - cash book - ledger
5. Trial balance - trading account - profit and loss account - balance sheet
6. Entries and adjustments of different heads in different books and accounts
7. Introduction to company accounts - managing accounting - meaning, functions, scope, utility
8. Limitations and tools of management accounting
9. **Mid semester examination**
10. Analysis of financial statements - ratios - comparative and common size statements - cash flow analysis - funds flow analysis - management audit and financial audit
11. Cost accounting - nature, significance of cost accounting - classification of cost - costing for material - labour and overheads
12. Marginal costing - break even analysis - cost volume profit analysis - its significance, uses and limitations
13. Standard costing - its meaning, uses and limitations - determination of standard cost, variance analysis - material, labour and overhead

14. Responsibility accounting - its meaning and significance - cost, profit and investment centers - accounting for price level changes
15. Concepts - CPP and CCA methods - budget and budgetary control - its meaning, uses and limitations
16. Budgeting and profit planning - different types of budgets and their preparations
17. Sales budget - purchase budget - production budget - cash budget - flexible budget - master budget - zero based budgeting

Practical schedule

1. Preparation of journal, ledger, day book
2. Preparation of balance sheet
3. Financial ratio analysis
4. Income statement
5. Depreciation methods
6. Comparative statement
7. Trend analysis
8. Percentage analysis
9. Standard costing
10. Variance analysis
11. Break-even analysis
12. Analysis of case studies
13. Cash budget analysis
14. Port folio management
15. Investment analysis
16. Capital market operations analysis
17. Case studies

Course outcome

At the end of the course students will be able to

1. Understand principles of financial accounting.
2. Differentiate various investment, transactions and performance measurements.
3. Know the role and management audit and financial audit in management accounting.
4. Know the basics and significant of cost accounting techniques.
5. Prepare budget efficiently and measure performance by analyzing standards costs.

Reference books

1. Chandra Prasanna, 2001. *Financial Management - Theory and Practice*, Tata Mc Graw Hill Publishing Company Ltd., New Delhi.
2. Kuchhal, S.C., 2000. *Financial Management,* Chaitanya Publishing House, Allahabad.
3. Maheswari, S.N., 2000. *Financial Management: Principles and Practice*, Sultan Chand and Sons, Educational Publishers, New Delhi.
4. Maheswari, S.N and Maheswari, S.K., 2007. *Financial Accounting*, 3rd Ed., Vikas Publ. House, New Delhi.
5. Pandey, I.M., 2002. *Financial Management*, Vikas Publishing House Pvt. Ltd., New Delhi.
6. www.en.wikipedia.org/wiki/Financial_ratio
7. www.referenceforbusiness.com
8. http://ocw.mit.edu/courses/economics
9. https://www.msu.edu/course/ECO/855
10. http://www.uky.edu/~deberti/prod/agprod5.pdf
11. http://www.csuchico.edu/ag/_assets/documents/syllabi/ABUS/ABUS%20301%20AG%20Production%20Econ%20Analysis.pdf

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X	X					
CO2	X			X		X				
CO3		X			X					
CO4	X							X		
CO5			X	X						X

ABM 623 Agricultural Project Management (1+1)

Learning Objective

- To provide the students a thorough understanding on agricultural project selection, formulation
- To explain financial feasibility analysis, monitoring
- To understand evaluation techniques with special reference to agri business sector

Theory

Unit-I : Agricultural projects - introduction

Project - definition - agricultural projects - project preparation and analysis - project cycle - identification, formulation, appraisal, implementation and evaluation - criteria for selection of agricultural projects.

Unit-II : Project identification and formulation

Project identification - entrepreneurs area of interest - background, land, building, water, investment. Sources of projects - resources - own and institutional. Enterprise - project cost, break even point, infrastructure, machinery, power, water, manpower requirement. Procedures for preparation of project proposal on crops, dairy, poultry, horticulture crops, forest, fisheries - data requirements and their format.

Unit-III : Project appraisal

Project appraisal - meaning and scope - types of project appraisal - technical, commercial, financial, economic and management appraisal - methodological issues in financial and economic evaluation of projects - measuring intangible costs and benefits - social cost and benefits analysis - choice among mutually exclusive projects.

Unit-IV : Project monitoring and evaluation

Methods of project monitoring and evaluation - cash flow analysis and discounting procedures - use of decision criteria NPV, BCR, Pay back period and IRR in decision making. Network techniques - PERT, CPM and crash programme methods - SWOT techniques. Analyzing risk in agricultural projects - sensitivity analysis - Decision tree analysis - Environment Impact Assessment (EIA).

Unit-V : Project management

Project management - project ranking - preparation of case studies - review of world bank aided projects - planning and preparation of macro level projects - irrigation, power, agricultural credit, input supply, cropping systems, animal husbandry, plantations, forestry, fisheries and agro-processing units. **Current streams of thought**

Practical

Developing skills in identification of agricultural development projects - formulation of projects - appraisal of projects using undiscounted and discounted techniques - review of world bank aided projects - market feasibility of the projects - use of sensitivity analysis - selection methods among mutually exclusive projects - repayment methods in projects - discussion of agricultural development projects - case studies - social cost benefit analysis - developing network techniques for project management - use of management tools in project monitoring - Analyzing risk in projects - project evaluation - project ranking - macro level agricultural development projects - agro processing projects - project presentation.

Theory schedule

1. Project - definition - agricultural projects - project preparation and analysis
2. Project cycle - identification, formulation, appraisal, implementation and evaluation - criteria for selection of agricultural projects
3. Project identification - entrepreneurs area of interest - background, land, building, water, investment
4. Sources of projects - resources - own and institutional
5. Enterprise - project cost, break even point, infrastructure, machinery, power, water, manpower requirement
6. Procedures for preparation of project proposal on crops, dairy, poultry, horticulture crops, forest, fisheries - data requirements and their format
7. Project appraisal - meaning and scope - types of project appraisal - technical, commercial, financial, economic and management appraisal
8. Methodological issues in financial and economic evaluation of projects
9. **Mid semester examination**
10. Measuring intangible costs and benefits
11. Methods of project monitoring and evaluation
12. Cash flow analysis and discounting procedures - use of decision criteria NPV, BCR, Pay back period and IRR in decision making

13. Network techniques - PERT, CPM and crash programme methods
14. SWOT techniques
15. Analyzing risk in agricultural projects
16. Project management - project ranking - preparation of case studies
17. Review of world bank aided projects - planning and preparation of macro level projects - irrigation, power, agricultural credit, input supply, cropping systems, animal husbandry, plantations, forestry, fisheries and agro-processing units

Practical schedule

1. Developing skills in identification of agricultural development projects
2. Formulation of projects
3. Appraisal of project using undiscounted and discounted techniques
4. Review of world bank aided projects
5. Market feasibility of the projects
6. Use of sensitivity analysis
7. Selection methods among mutually exclusive projects
8. Repayment methods in project
9. Discussion of agricultural development projects - case studies
10. Social cost benefit analysis
11. Developing network techniques for project management
12. Use of management tools in project monitoring
13. Analyzing risk in projects
14. Project evaluation - project ranking
15. Macro level agricultural development projects
16. Agro processing projects
17. Project presentation

Course outcome

At the end of the course students will be able to

1. Know the scope, cost, timing and quality of the project.
2. Identify project goals, constraints and resources requirements in consultation with stakeholders.
3. Understand social cost and benefit analysis and the make choice among mutually exclusive projects.
4. Evaluate the projects using programming techniques.
5. Apply project management practices to meet the needs of state holders from multiple sectors of the economy.

Reference books

1. Chandra, Prasanna, 1995. *Projects: Preparation, Appraisal, Budgeting and Implementation*, Tata Mc - Graw Hill Publications, New Delhi.
2. Gopal Krishan, P. and K. Nagarajan, 2005. *Project Management*, New Age Publishing, New Delhi.
3. Goel, B.B., 1989. *Project Management*, Deep and Deep Publications, New Delhi.
4. Gittinger, Price J., 1982. *Economic Analysis of Agricultural Projects*, The John Hopkins University Press, London.
5. Ramamoorthy, V.E., 2005. *Textbook of Project Management*, Macmillan, New Delhi.
6. www.edc-iitd.org
7. www.ediindia.org
8. www.projectmanagement.com
9. www.projectscenter.com

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X			X					
CO2	X			X		X				
CO3			X	X				X		
CO4		X	X					X		
CO5	X	X	X							X

ABM 624 Agribusiness Financial Management (2+0)

Learning Objective

- To impart knowledge regarding various aspects of financial management for agribusiness
- To explain the functions of financial institutions

Theory

Unit-I : Introduction to financial management

Importance, need and scope of financial management - classification of credit - credit needs in changing agriculture scenario - finance functions - investment financing - balance sheet - income statement - cash flow statement for agribusiness.

Unit-II : Financial planning

Financial planning and control - assessment of financial requirement of a agribusiness unit. Leverage - concept of leverage, financial and operating leverage - factor affecting capital structure - features of an optimal capital structure.

Unit-III : Working capital management

Working capital management - concept and components of working capital - need for working capital in agribusiness - management of cash and accounts receivables - inventory for agribusiness.

Unit-IV : Capital budgeting

Capital budgeting - steps and concept of capital budgeting - appraisal criteria - payback period, average rate of return, net present value, benefit-cost ratio and internal rate of return - sensitivity analysis.

Unit-V : Agribusiness finance system

Agri-business financing system in India - functioning of cooperative credit institutions, commercial banks, regional rural banks, NABARD, agro-industries corporation, etc in agribusiness financing. **Current streams of thought**

Theory schedule

1. Importance, need and scope of financial management
2. Classification of credit
3. Credit needs in changing agriculture scenario
4. Finance functions
5. Investment financing
6. Balance sheet for agribusiness
7. Income statement for agribusiness
8. Cash flow statement for agribusiness
9. Financial planning and control
10. Assessment of financial requirement of a agribusiness unit
11. Leverage - concept of leverage
12. Financial leverage - operating leverage
13. Factor affecting capital structure
14. Features of an optimal capital structure
15. Working capital management
16. Concept and components of working capital
17. **Mid semester examination**
18. Need for working capital in agribusiness
19. Management of cash - accounts receivables
20. Inventory for agribusiness
21. Capital budgeting
22. Steps and concept of capital budgeting
23. Appraisal criteria
24. Payback period, average rate of return
25. Net present value
26. Benefit-cost ratio
27. Sensitivity analysis
28. Agri-business financing system in India
29. Internal rate of return
30. Functioning of cooperative credit institutions
31. Commercial banks in agribusiness financing
32. Regional rural banks in agribusiness financing
33. NABARD in agribusiness financing
34. Agro-Industries Corporation in agribusiness financing

Course outcome

At the end of the course students will be able to

1. Grasp the significance of common investment criteria and project cash flows.
2. Know capital investments decision and financial policies to business valuations
3. Analyze working capital and inventory for agri business.
4. Identify relevant cash flows for capital budgeting projects and apply various methods to analyse projects.
5. Understand the functions of various financing institutions and analyse financing system in agribusiness sectors.

Reference books

1. Chandra, P., 2000. *Financial Management*, Tata McGraw Hill, New Delhi.
2. Khan, M.Y. and Jain P.K., 2004. *Management Accounting*, Tata McGraw Hill, New Delhi.
3. Nelson, A.G and Murrey W.G., 1988. *Agricultural Finance*, Kalyani Publication, New Delhi.
4. Pandey, I.M., 1997. *Financial Management*, Vikas Publication House, New Delhi.
5. Van Horne, J.C., 1997. *Financial Management and Policy*, Prentice Hall of India, New Delhi.
6. www.logisticsmgmt.com
7. www.managementhelp.org

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2	X		X			X				
CO3			X	X				X		
CO4	X	X						X		
CO5			X	X						X

ABM 625 Operations Research (1+1)

Learning Objectives

- To acquaint the learner with the applications of operations research techniques
- To understand the use of these techniques in solving business problems

Theory

Unit-I : Linear programming

Linear programming - objective, assumptions, formulation of linear programming problems - graphical method - simplex method - applications of operations research in functional areas of management.

Unit-II : Transportation and assignment problem

Transportation problem - formulation - initial basics feasible solution - degeneracy in transportation problem. Assignment problem - formulation algorithm - routing problems - sequencing problems.

Unit-III : Waiting line models

Waiting line problem - characteristics of a waiting line system - single channel model - multiple channel model - constant service time model - finite population model - sequencing and replacement models.

Unit-IV : Decision making under risk

Decision making under risk and uncertainties - decision problem - maximax criterion - maximin criterion - minimax regret criterion - laplace criterion - pay off tables - decision trees - expected value of perfect information - decision making environment.

Unit-V : Game theory

Game theory - two person zero sum game - competitive situations - characteristics competitive games simulation - network analysis - PERT and CPM.

Current streams of thought

Practical

Linear programming - formulation - graphical solution - simplex method - artificial variable technique - problem of degeneracy - concept of duality - formulation of primal - dual problems - dual simplex method - revised simplex method. Transportation problem - formulation - initial basic feasible solution and optimal solution - degeneracy in transportation problem. Assignment problem - routing problems - sequencing problems - waiting line problem - single channel model - multiple channel model - constant - service time model - finite population model - sequencing and replacement models. Game theory - two person zero sum games - problem solving in game theory using saddle points and dominance property. Net work problems - Critical Path Method (CPM) - Project Evaluation Review Technique (PERT) - time calculations.

Theory schedule

1. Linear programming - objective, assumptions
2. Formulation of linear programming problems - graphical method - simplex method
3. Applications of operations research in functional areas of management
4. Transportation problem - formulation
5. Initial basics feasible solution - degeneracy in transportation problem
6. Assignment problem - formulation algorithm
7. Routing problems - sequencing problems
8. Waiting line problem - characteristics of a waiting line system, single channel model - multiple channel model
9. **Mid semester examination**
10. Constant service time model - finite population model
11. Sequencing and replacement models
12. Decision making under risk and uncertainties - decision problem - maximax criterion - maximin criterion
13. Minimax regret criterion - laplace criterion - pay off tables - decision trees - expected value of perfect Information, decision making - environment
14. Game theory - introduction - two person zero sum games
15. Competitive situations and characteristics of competitive games simulation
16. Net work analysis - basic components - rules
17. Critical Path Method (CPM), Project Evaluation Review Technique (PERT), time calculations in net work problems

Practical schedule

1. Linear programming problems - formulation
2. Graphical solution - simplex method
3. Artificial variable technique - problem of degeneracy
4. Concept of duality - formulation of primal - dual problems
5. Dual simplex method - revised simplex method
6. Transportation problem - formulation
7. Initial basic feasible solution and optimal solution
8. Degeneracy in transportation problem
9. Assignment problem
10. Routing problems - sequencing problems
11. Waiting line problem - single channel model - multiple channel model
12. Constant service time model - finite population model
13. Sequencing and replacement models
14. Game theory - two person zero sum games
15. Problem solving in game theory using saddle points and dominance property
16. Net work problems - Critical Path Method (CPM)
17. Project Evaluation Review Technique (PERT) - time calculations

Course outcome

At the end of the course students will be able to

1. Construct linear programming models for shortest path, maximum flow, minimum cost flow, critical path, transshipment problems.
2. Solve the problems using special solutions algorithms.
3. Set up decision models and use some solutions methods for nonlinear optimization problems.
4. Solve multi – level decision problem using dynamic programming method.
5. Use game theories in solving agri business problems.

Reference books

1. Gupta, P.K. and D.S. Hira, 2004. *Operations Research*, Sultan Chand and Sons, New Delhi.
2. Kanji Swarup, P.K. Gupta and Man Mohan, 1999. *Operations Research*, Sultan Chand and Sons, New Delhi.
3. Taha, H.A., 1982. *Operations Research - An Introduction*, Macmillan, India Ltd, New Delhi.
4. Vohra, N.D., 2006. *Quantitive Techniques in Management*, Mc Graw Hill, New Delhi.
5. Wagner, H.M., 2005. *Principles of Operations Research*, Prentice Hall, New Delhi.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X		X	X	X					
CO2		X	X			X				
CO3			X	X				X		
CO4	X	X						X		
CO5		X		X						X

ABM 626 Agri Business Environment, Business Law and Policy (1+0)

Learning Objectives

- To expose learners to the environment in which the agribusiness is conducted
- To explain ethical issues and laws affecting business
- To understand micro and macro environmental forces and their impact on agribusiness

Unit-I : Agri business environment

Role of agriculture in Indian economy - problems and policy changes in India relating to - farm supplies - farm production - agro processing and agricultural marketing.

Unit-II : Agri business sector

Structure of agriculture - linkages among sub sectors of the agribusiness sector - economic reforms in Indian agriculture - impact of liberalization, privatization and globalization on agri business sector.

Unit-III : Agri business policy

Agribusiness policies - concept and formulation - new dimensions in agri business environment and policy - public distribution systems and other policies.

Unit-IV : Introduction to India business law

Introduction to Indian legal system - The Indian Contract Act 1872. Contract - meaning, nature, significance, types of contract - essentials of a valid contract - acceptance - capacity to contract - free consent - performance of contract.

Unit-V : Legal acts

Companies Act 1956 incorporation - sale of goods act - commencement of business - types of companies management - winding of companies - negotiable instruments act - essential commodities act - APMC act - Consumer protection act - RTI act - MRTP act - major provisions and implications. Factory act - labour laws - Industrial dispute act - law of insurance. **Current streams of thought**

Theory schedule

1. Role of agriculture in Indian economy
2. Problems and policy changes in India relating to farm supplies and farm production
3. Problems and policy changes in India relating to agro processing and agricultural marketing
4. Structure of agriculture - linkages among sub-sectors of the agribusiness sector
5. Economic reforms in Indian agriculture - impact of liberalization, privatization and globalization on agri business sector
6. New dimensions in agri business environment and policy
7. Public distribution systems and other policies
8. Introduction to Indian legal system
9. **Mid semester examination**
10. The Indian Contract Act 1872. Contract - meaning - nature - significance
11. Types of contract - essentials of a valid contract acceptance
12. Capacity to contract - free consent - performance of contract
13. Companies act 1956 incorporation - sale of goods act and commencement of business
14. Types of companies - management - winding of companies
15. Negotiable instruments act - essential commodities act
16. APMC act - consumer protection act
17. RTI act - MRTP act - major provisions and implications - factory act - labour laws - industrial dispute act - law of insurance

Course outcome

At the end of the course students will be able to

1. Understand the general legal boundaries.
2. Identify legal issues that impact financial and other risks effecting business.
3. Identify and interpret sources of law effecting business.
4. Analyse the relevant case law for the purpose of finding legal precedents.
5. Analyse the legal issues affecting business.

Reference books

1. Adhikary, M., 1986. *Economic Environment of Business*, Sulthan Chand and Sons, New Delhi.
2. Aswathappa, K., 1997. *Essentials of Business Environment*, Himalaya Publication, New Delhi.
3. Gulshan, S.S. and Kapoor, G.K., 2003. *Business Law Including Company Law*, 10th Edition, New Delhi.
4. Kapoor, N.D., 2005. *Business Law,* Tata McGraw Hill, New Delhi.
5. Tulsain, P.C., 2006. *Business Law*, Tata McGraw Hill, New Delhi.
6. www.taxinfo.com www.mca.gov.in
7. www.laws4india.com
8. www.indialaw.com
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	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X	X					
CO2		X		X		X				
CO3		X		X				X		
CO4		X						X		
CO5				X						X

ABM 711 E1 Logistics and Supply Chain Management (2+0)

Learning Objective

- To introduce the students to the concepts and processes of agricultural supply chain management
- To understand supply chain drivers, network designs
- To explain demand forecasting, inventory planning, sourcing decisions and IT enablement of supply chain

Theory

Unit-I : Concept of supply chain management

Supply chain: changing business environment - supply chain management - present need - conceptual model of supply chain management - evolution of supply chain management - supply chain management approach - traditional agri supply chain management approach - modern supply chain management approach - elements in supply chain management.

Unit-II : Demand management in supply chain

Demand management in supply chain **-** types of demand, demand planning and forecasting - operations management in supply chain - basic principles of manufacturing management.

Unit-III : Procurement management in supply chain

Procurement management in agri. supply chain. Purchasing Cycle - types of purchases - contract/corporate farming - classification of purchases: Goods or services. Traditional inventory management - material requirements planning, Just in Time (JIT), Vendor Managed Inventory (VMI).

Unit-IV : Logistic management in supply chain

Logistics management - history and evolution of logistics - elements of logistics management - distribution management - distribution strategies - pool distribution - transportation management - fleet management - service innovation - warehousing - packaging for logistics - Third-party logistics (TPL/3PL) - GPS Technology.

Unit-V : Information technologies

Concept of information technology - IT application in supply chain management - advanced planning and scheduling - supply chain management in electronic business - role of knowledge in supply chain management - performance measurement and controls in agri. supply chain management. Benchmarking - introduction, concept and forms of benchmarking. **Current streams of thought**

Theory schedule

1. Supply chain - changing business environment - supply chain management - present need
2. Conceptual model of supply chain management
3. Evolution of supply chain management
4. Supply chain management approach - traditional agri. supply chain management approach
5. Modern supply chain management approach
6. Elements in supply chain management
7. Demand management in supply chain
8. Types of demand, demand planning and forecasting
9. Operations management in supply chain
10. Basic principles of manufacturing management
11. Procurement management in agri. supply chain - purchasing cycle
12. Types of purchases
13. Contract/corporate farming
14. Classification of purchases: goods or services
15. Traditional inventory management
16. Material requirements planning
17. **Mid semester examination**
18. Just in Time (JIT)
19. Vendor Managed Inventory (VMI)
20. Logistics management
21. History and evolution of logistics
22. Elements of logistics management
23. Distribution management, distribution strategies
24. Pool distribution
25. Transportation management
26. Fleet management

27. Service innovation - warehousing - packaging for logistics
28. Third-party logistics (TPL/3PL) - GPS technology
29. Concept of information technology - IT application in supply chain management
30. Advanced planning and scheduling
31. SCM in electronic business
32. Role of knowledge in supply chain management
33. Performance measurement and controls in agriculture - supply chain management
34. Benchmarking: introduction, concept and forms of benchmarking

Course outcome

At the end of the course students will be able to

1. Understand fundamental supply chain management concepts, analyse and improve supply chain processes.
2. Understand basic principles of operations management in supply chain.
3. Apply logistic and purchasing concepts to improve supply chain operations.
4. Construct the supply chain management technique with corporate goals and strategies.
5. Apply information technology in supply chain management.

Reference books

1. Altekar, R.V., 2006. *Supply Chain Management: Concepts and Cases*. Prentice Hall of India.
2. Monczka, R., Trent R and Handfield R., 2002. *Purchasing and Supply Chain Management*. Thomson Asia.
3. Van Weele, A.J., 2000. *Purchasing and Supply Chain Management Analysis Planning and Practice*. Vikas Publ. House, New Delhi.
4. Gibson, G. Vedamani., 2003. *Retail Management*, Jaico Publishing House, Mumbai.
5. Jishnu Hazra and Janat Shah, 2005. *Supply Chain Management*, Indian Institute of Management (Publications), Bangalore.
6. www.logisticsonline.com
7. www.supplychainmarket.com

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2	X	X				X				
CO3			X	X				X		
CO4	X		X					X		
CO5			X	X						X

ABM 711 E2 Farm Business Management (2+0)

Learning Objective

- To acquaint the students with the basic principles of farm management
- To analyse farm resources having alternatives within the framework of resource restrictions

Theory

Unit-I : Scope of farm business management

Nature, scope, characteristics and role of farm business management - farm management decisions - farm management problems.

Unit-II : Principles of farm management

Principles of farm management decisions - principle of variable proportion - cost principle - principle of factor substitution - law of equi-marginal returns - opportunity cost principle - time comparison principle - principle of comparative advantage.

Unit-III : Tools of farm management

Tools of farm management and farm business analysis - valuation of farm assets - depreciation - net worth statement - income statement - cash flow statement. Farm planning and budgeting - enterprises budgeting - partial budgeting - complete budgeting - steps in whole farm planning and budgeting. Farm records and accounts - types and problems in farm records and accounts.

Unit-IV : Management of farm resources

Management of farm resources - land, labour, farm machinery, farm building, etc. Farm efficiency measures - physical efficiency, financial efficiency measures - break even point analysis.

Unit-V : Risk and uncertainty

Risk and uncertainty in farming - sources of uncertainty in farming, management strategy to counteract uncertainty and decision making process in farm business management under risk and uncertainty. **Current streams of thought**

Theory schedule

1. Nature, scope, characteristics and role of farm business management
2. Farm management decisions
3. Farm management problems
4. Principles of farm management decisions
5. Principle of variable proportion
6. Cost principle
7. Principle of factor substitution
8. Law of equi-marginal returns
9. Opportunity cost principle
10. Time comparison principle
11. Principle of comparative advantage
12. Tools of farm management and farm business analysis
13. Valuation of farm assets
14. Depreciation methods
15. Networth statement
16. Income statement
17. **Mid semester examination**
18. Cashflow statement
19. Farm planning and budgeting
20. Enterprises budgeting
21. Partial budgeting
22. Complete budgeting
23. Steps in whole farm planning and budgeting
24. Farm records and accounts
25. Types and problems in farm records and accounts
26. Management of farm resources
27. Land, labour, farm machinery, farm building, etc
28. Farm efficiency measures
29. Physical and financial efficiency measures
30. Break even point analysis
31. Risk and uncertainty in farming
32. Sources of uncertainty in farming
33. Management strategy to counteract uncertainty
34. Decision making process in farm business management under risk and uncertainty

Course outcome

At the end of the course students will be able to

1. Understand the farm management problems for taking decisions.
2. Gain the knowledge about principle of farm management.
3. Select of tools of farm management for various problems related to farm.
4. Identify the way to use farm resources efficiently.
5. Manage of farm resources under risk and uncertainty.

Reference books

1. Heady, E.O. and Jensen H., 1960. *Farm Management Economics*. Prentice Hall, New Delhi.
2. Johl, S.S., and Kapoor T.R., 1973. *Fundamentals of Farm Business Management*. Kalyani Publication, New Delhi.
3. Kahlon, A.S., and Singh K., 1992. *Economics of Farm Management in India*. Allied Publication, New Delhi.
4. Panda, S.C., 2007. *Farm Management and Agricultural Marketing*. Kalyani Publication, New Delhi.
5. Raju, V.T., and Rao S., 2000. *Economics of Farm Production and Management*, Oxford and IBH Publishing Company Pvt. Ltd., New Delhi.
6. Dhondyal, S.P., Singh G.N., 2011. *Production Economics and Farm Management*, Aman Publishing Company, Meerut.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X	X					
CO2	X	X				X				
CO3		X	X	X				X		
CO4			X	X				X		
CO5		X								X

ABM 711 E3 Sales and Distribution Management in Agri Business (2+0)

Learning Objectives

- To provide knowledge to students on the theory of sales management
- To identify practices of sales promotion and product management in agri business

Theory

Unit-I : Introduction to sales management

Selling and marketing - selling and advertising - sales objectives - functions of sales management - duties and responsibilities of sales manager. Salesmanship - art, science and profession - types of salesmanship - advantages and limitations of salesmanship - qualities of a good salesman.

Unit-II : Sales management functions, selling process

Sales management - functions - sales planning, sales policy - sales organization - structuring and managing sales force - designing sales territories - fixing sales quota - controlling and motivating sales force. Selling processes - sizing up customers - AIDAS formula - sales promotion techniques - dealer and consumer promotion.

Unit-III : Training of salesman and methods of appraisal

Recruitment and selection of sales force - the need for sales - selection process. Training of salesman - importance, objectives, methods of training. Supervision of salesman - executive sales training programme. Appraising salesman's performance - methods of appraisal - indices of salesman's performance - compensation of sales force - principles of compensation to salesman - methods of compensation - additional compensator scheme.

Unit-IV : Distribution channels and marketing risk

Physical distribution - meaning - distribution mix - role of distribution in marketing. Transport - kinds, functions, advantages and limitations, managing transport - criteria for selecting good transport. The channels of distribution - its importance - selection of right channel - types of channels - dealer network. Managing marketing risk - types of risk - controlling risk - minimizing and managing risk.

Unit-V : Distribution environment - intermediaries

Distribution environment - competitors, extensive distribution - franchise selling, Public distribution - its special features. Distribution intermediates - their role and importance - types of intermediates - wholesaler and retailers - kinds of retailers - small scale and large scale retailers. Other intermediaries - brokers, commission agents, dealers, sole selling agents. **Current streams of thought**

Theory schedule

1. Selling and marketing - selling and advertising - sales objectives
2. Functions of sales management - duties and responsibilities of sales manager
3. Salesmanship - art, science and profession, types of salesmanship
4. Advantages and limitations of salesmanship - qualities of a good salesman
5. Sales management - functions - sales planning, sales policy
6. Sales organization, structuring and managing sales force
7. Designing sales territories - fixing sales quota, controlling and motivating sales force
8. Selling processes - sizing up customers - AIDAS formula
9. Sales promotion techniques - dealer and consumer promotion
10. Recruitment and selection of sales force
11. The need for sales - selection process
12. Training of salesman - importance, objectives, methods of training
13. Supervision of salesman - executive sales training programme
14. Appraising salesman's performance - methods of appraisal
15. Indices of salesman's performance
16. Compensation of sales force - principles of compensation to salesman
17. **Mid semester examination**
18. Methods of compensation - additional compensator scheme
19. Physical distribution - meaning - distribution mix - role of distribution in marketing
20. Transport - kinds, functions, advantages and limitations
21. Managing transport - criteria for selecting good transport
22. The channels of distribution - its importance
23. Selection of right channel
24. Types of channels - dealer network

25. Managing marketing risk - types of risk

26. Controlling risk - minimizing and managing risk
27. Distribution environment
28. Competitors, extensive distribution - franchise selling
29. Public distribution - its special features
30. Distribution intermediates - their role and importance
31. Types of intermediates
32. Wholesaler and retailers - kinds of retailers
33. Small scale and large scale retailers
34. Other intermediaries - brokers, commission agents, dealers, sole selling agents

Course outcome

At the end of the course students will be able to

1. Understand the roles and responsibilities of the sales managers.
2. Manage and enhance the sales force productivity and performance.
3. Know the methods to train sales force for an effective sales strategy.
4. Design and implement distribution channel strategy.
5. Manage the channels efficiently and effectively under different business enivironment.

Reference books

1. Acharya and Govekar, 2001. *Marketing and Sales Management*, Himalaya Publishing House, Mumbai.
2. Bellur, V.V., 2001. *Sales Management*, Himalaya Publishing House, Bombay.
3. Philip Kotler, 2006. *Principles of Marketing*, Prentice Hall of India, New Delhi.
4. Ramasamy, V.S., 2001. *Marketing Management*, Macmillan, New Delhi.
5. Rom Markin, 2000. *Marketing Strategy and Management*, John Wiley Sons Inc., New York.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2	X		X			X				
CO3	X		X	X				X		
CO4		X	X					X		
CO5		X	X							X

ABM 712 E1 Entrepreneurship Development (2+0)

Learning Objective

- To make the students understand the concept of entrepreneurship development skills for agri business
- To explain its application

Theory

Unit-I : Concept of entrepreneurship development

Introduction - agri business - entrepreneur - qualities of entrepreneur - entrepreneurial process - entrepreneurial competencies and orientation. Innovation levels - types, process and drivers to improve the innovation competencies. Identification of business opportunities and guidelines for starting farm enterprises.

Unit-II : Classification of entrepreneurship

Types of entrepreneurship - food processing - export oriented units - agri inputs - organic product entrepreneurship - service entrepreneurs - certification entrepreneurs - clearing and forwarding entrepreneurs - machinery manufacturers.

Unit-III : Significance of entrepreneurship

Entrepreneurship - significance of entrepreneurship in economic development - entrepreneurship development programs - role of various institutions in developing entrepreneurship - life cycles of new business, environmental factors affecting success of a new business - reasons for the failure and visible problems of business.

Unit-IV : Business plan preparation

Developing effective business plans - procedural steps in setting up of an industry. Business feasibility analysis - techno, economic, financial and social cost benefit analysis. Network analysis - PERT and CPM.

Unit-V : Government schemes and social entrepreneurship

Government schemes and incentives for promotion of entrepreneurship - institutional support to business entrepreneurs - business incubation and entrepreneurship. Social entrepreneurship - concept and opportunities. **Current streams of thought**

Theory schedule

1. Introduction to agri business
2. Entrepreneur - qualities of entrepreneurs
3. Entrepreneurial process
4. Entrepreneurial competencies and orientation
5. Innovation levels, types, process and drivers to improve the innovation competencies
6. Identification of business opportunities
7. Guidelines for starting farm enterprises
8. Types of entrepreneurship
9. Food processing
10. Export oriented units
11. Agri inputs entrepreneurship
12. Organic product entrepreneurship
13. Service entrepreneur
14. Certification entrepreneurs
15. Clearing and forwarding entrepreneurs
16. Machinery manufacturers
17. **Mid semester examination**
18. Entrepreneurship - significance of entrepreneurship in economic development
19. Entrepreneurship development programs
20. Role of various institutions in developing entrepreneurship
21. Life cycles of new businesses
22. Environmental factors affecting success of a new business
23. Reasons for the failure and visible problems of business
24. Developing effective business plans
25. Procedural steps in setting up of an industry
26. Business feasibility analysis
27. Techno, economic, financial and feasibility analysis
28. Social cost benefit analysis
29. Network analysis - PERT and CPM
30. Government schemes and incentives for promotion of entrepreneurship - I
31. Government schemes and incentives for promotion of entrepreneurship - II
32. Institutional support to business entrepreneurs

33. Business incubation and entrepreneurship
34. Social entrepreneurship - concept and opportunities

Course outcome

At the end of the course students will be able to

1. Understand basic concepts in entrepreneurship developments.
2. Identify different type of entrepreneurship related agri business sector.
3. Assess opportunities and constraints for new business ideas.
4. Understand the systemic process to select and screen a business idea.
5. Discuss various schemes implemented by government for promotion of entrepreneurship.

Reference books

1. Badi, R.V and N.V. Badi, 2007. *Entrepreneurship*, Vrinda Publication (p) Ltd, New Delhi.
2. David H. Holt., 2008. *Entrepreneurship*, New Venture Creation, PHI, New Delhi.
3. Nandan, H., 2007. *Fundamentals of Entrepreneurship Management*, Prentice Hall, New Delhi.
4. Peter F. Drucker, 2006. *Innovation and Entrepreneurship Practice and Principles*, 2006. HarperCollins, London.
5. Sahay, A., and M.S. Chhikara, 2007. *New Vistas of Entrepreneurship Challenges and Opportunities*, Excel Books, New Delhi.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2	X	X		X		X				
CO3		X	X					X		
CO4	X		X					X		
CO5			X	X						X

ABM 712 E2 Rural and Service Marketing (2+0)

Learning Objectives

- To develop an understanding on the issues in rural markets and marketing environment
- To analyse consumer behaviour, distribution channels and marketing strategies

Theory

Unit-I : Overview of rural marketing

Concept and scope of rural marketing - nature and characteristics of rural markets - potential of rural markets in India - rural communication and distribution.

Unit-II : Factors affecting rural marketing

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

Unit-III : Consumer's behaviour

Rural consumer's behaviour - behaviour of rural consumers and farmers - buyer characteristics and buying behaviour. Rural Vs urban markets - customer relationship management - rural market research - implications of rural market research.

Unit-IV : Rural marketing strategy

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

Unit-V : Promotion strategy

Promotion and communication strategy - media planning - planning of distribution channels - organizing personal selling in rural market in India - innovations in rural marketing. **Current streams of thought**

Theory schedule

1. Concept and scope of rural marketing
2. Nature of rural markets
3. Characteristics of rural markets
4. Potential of rural markets in India
5. Rural communication and distribution
6. Environmental factors affecting rural marketing
7. Socio-cultural factors affecting rural marketing
8. Economic factors affecting rural marketing
9. Demographic factors affecting rural marketing
10. Technological factors affecting rural marketing
11. Other environmental factors affecting rural marketing
12. Rural consumer's behaviour
13. Behaviour of rural consumers
14. Behaviour of rural farmers
15. Buyer characteristics and buying behaviour
16. Rural Vs urban markets
17. **Mid semester examination**
18. Customer relationship management
19. Rural market research
20. Implication of rural market research
21. Rural marketing strategy
22. Marketing of consumer durable goods
23. Marketing of non-durable goods
24. Marketing of services in the rural markets with special reference to product planning
25. Product mix
26. Pricing policy and pricing strategy
27. Distribution strategy
28. Promotion strategy
29. Communication strategy
30. Media planning
31. Planning of distribution channels
32. Organizing personal selling in rural market in India
33. Innovations in rural marketing - I

34. Innovations in rural marketing - II

Course outcome

At the end of the course students will be able to

1. Gain conceptual knowledge about rural marketing.
2. Understand the rural market distribution and factors affecting it.
3. Know about the consumer behavior and trend in rural marketing.
4. Know in detail about the service sector and apply the 7P's of service marketing.
5. Identify recent innovations in rural marketing.

Reference books

1. Acharya, S.S. and N.L. Agarwal, 2008. *Agricultural Marketing in India,* Oxford and IBH, New Delhi.
2. Krishnamacharyulu, C. and Ramakrishan L., 2002. *Rural Marketing*, Pearson Edu., New Delhi.
3. Ramaswamy, V.S. and Nanakumari S., 2006. *Marketing Management*. 3rd Ed., MacMillan Publications, New Delhi.
4. Singh, A.K. and Pandey S., 2005. *Rural Marketing*, New Age Publications, New Delhi.
5. Singh Sukhpal, 2004. *Rural Marketing*, Vikas Publ. House., New Delhi.
6. http://miteshk.webs.com/RURALMARKETING.pdf
7. http://www.slideshare.net/
8. http://www.ijars.in/iJARS%20506.pdf
9. http://www.rmai.in/publication.html
10. http://www.bms.co.in/rural-marketing-notes/

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2	X			X		X				
CO3			X					X		
CO4		X						X		
CO5				X						X

ABM 712 E3 Food Retail Management (2+0)

Learning Objectives

- To assist the students in understanding the structure and working of food marketing system in India
- To examine how the system affects farmers, consumers and middlemen
- To illustrate the response of this dynamic marketing system to technological, socio-cultural, political and economic forces over time

Theory

Unit-I : International food market

Introduction to international food market - India's competitive position in the world food trade - foreign investment in global food industry - retail management and food retailing - the nature of change in retailing - organized retailing in India - retailing and understanding food preferences of Indian consumers - food consumption and expenditure pattern - demographic and psychographic factors affecting food pattern of Indian consumer.

Unit-II : Value chain

Value chain in food retailing **-** principal trends in food wholesaling and retailing - the changing nature of food stores - various retailing formats - competition and pricing in food retailing - market implications of new retail developments - value chain and value additions across the chain in food retail - food service marketing.

Unit-III : Pricing strategies

4 P's in food retail management **-** brand management in retailing - merchandise pricing - pricing strategies used in conventional and non-conventional food retailing - public distribution system - promotion mix for food retailing - management of sales promotion and publicity - advertisement strategies for food retailers.

Unit-IV : Retail operations

Managing retail operations **-** managing retailers' finance - merchandise buying and handling - merchandise pricing - logistics - procurement of food products and handling transportation of food products.

Unit-V : Retail selling

Retail sales management types of retail selling - salesperson selection - salesperson training - evaluation and monitoring - customer relationship management - managing human resources in retailing - legal and ethical issues in retailing. **Current streams of thought**

Theory schedule

1. Introduction to international food market
2. India's competitive position in world food trade
3. Foreign investment in global food industry
4. Retail management and food retailing
5. The nature of change in retailing
6. Organized retailing in India
7. Retailing and understanding food preferences of Indian consumers
8. Food consumption and expenditure pattern
9. Demographic and psychographic factor affecting food pattern of Indian consumer
10. Value chain in food retailing
11. Principal trends in food wholesaling and retailing
12. The changing nature of food stores
13. Various retailing formats
14. Competition and pricing in food retailing
15. Market implications of new retail developments
16. Value chain and value additions across the chain in food retail
17. **Mid semester examination**
18. Food service marketing
19. 4 P's in food retail management
20. Brand management in retailing
21. Merchandise pricing, pricing strategies used in conventional and non-conventional food retailing
22. Public distribution system
23. Promotion mix for food retailing
24. Management of sales promotion and publicity
25. Advertisement strategies for food retailers
26. Managing retail operations and retailers' finance

27. Merchandise buying and handling, merchandise pricing
28. Logistics, procurement of food products and handling transportation of food products
29. Retail sales management
30. Types of retail selling
31. Salesperson selection, training, evaluation and monitoring
32. Customer relationship management
33. Managing human resources in retailing
34. Legal and ethical issues in retailing

Course outcome

At the end of the course students will be able to

1. Understand the concepts of effective retailing.
2. Know the recent trends in retailing.
3. Possess the knowledge of pricing strategies in retail marketing.
4. Manage the various retail operations like finance, handling, buying, transportation etc.,
5. Understand customers relationship management and legal and ethical issues in retaining.

Reference books

1. Acharya, S.S., and N.L., Agarwal, 2004. *Agricultural Marketing in India*, Oxford and IBH, New Delhi.
2. Berman and Evans, 2008. *Retail Management: A Strategic Approach*, 10th Ed., Prentice Hall of India, New Delhi.
3. Cox, 2006. *Retailing: An Introduction*, 5th Ed. Pearson Edu, New Delhi.
4. Levy, M., and Weitz B.W, 2004. *Retailing Management*, 5th Ed. McGraw Hill Publishing, New Delhi.
5. Potly, V.H., and M.J. Mulky, 1993. *Food Processing*, Oxford and IBH, New Delhi.
6. www.fssai.in
7. www.qavi.org/nabcb/accreditation/reg_bod_qms.php
8. www.qcin.org

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2		X		X		X				
CO3	X		X					X		
CO4		X	X					X		
CO5				X						X

ABM 713 E1 Insurance and Risk Management (2+0)

Learning Objective

- To provide the students a thorough knowledge on the principles of insurance
- To understand practices of risk management in agri business
- To analyse various insurance policies and schemes available for agri business

Theory

Unit-I : Concept of risk and insurance

The concept of risk - kinds and classification of risks - assessment - the concept of insurance - types of general insurance, agriculture, fire, marine, engineering - insurance of property. Insurance professionals and intermediaries.

Unit-II : Principles of insurance

Basic principles of insurance - utmost good faith - insurable interest - material facts. Economic principles - sharing - subrogation - contribution. Legal principles - the Indian Contract Act, 1872 - nomination and assignment. Financial principles - premium funds - investments.

Unit-III : Agricultural insurance

Agricultural situation - types of agricultural insurance - scope and practices. Crop insurance - problems and remedies - crop insurance in other countries. Cattle insurance policy - valuation of cattle loans assessment - settlement of claims. Poultry insurance - miscellaneous insurance - shrimp culture, sericulture, apiculture, plantations, bio-gas, animal driven cart, agricultural pump sets.

Unit-IV : Basics in risk management

Risk and uncertainty - acceptable risks versus unacceptable risks - classification of risk - the cost of risk - handling risks. The scope and objective of risk management - measurement of risk and adjustment to risk - linear programming and marginal analysis - MOTAD - personal risk management.

Unit-V : Techniques of risk management

Risk identification - risk evaluations - statistical methods and probability concepts - decision taken under conditions of risk and uncertainty - risk avoidance - risk reduction and loss control - insurance - benefits and limitations - partial insurances - risk management and corporate objectives. **Current streams of thought**

Theory schedule

1. Concept of risk in the context of agri business
2. Kinds and classification of risk - risk assessment
3. The concept of insurance
4. Types of general insurance - agriculture
5. General insurance - fire, marine, engineering insurance of property
6. Insurance professionals and intermediaries
7. Basic principles of insurance - utmost good faith - insurable interest - material facts
8. Economic principles of - sharing - subrogation - contribution
9. Legal principles of insurance
10. The Indian contract act 1872 - nomination and assignment
11. Financial principles - premium funds - investments
12. Agricultural situation in India
13. Types of agricultural insurance - scope and practices
14. Problems in crop insurance and remedies
15. Crop insurance in other countries
16. Cattle insurance policy - valuation of cattle loans assessment - settlement of claims
17. **Mid semester examination**
18. Poultry insurance - valuation - loss assessment - settlement
19. Insurance for sericulture, apiculture
20. Insurance for shrimp culture
21. Insurance for plantations
22. Insurance for bio - gas, pump sets and other miscellaneous insurance
23. Basics in risks and uncertainty
24. Acceptable risks versus unacceptable risks
25. Classification of risks relevant to agri business
26. The cost of risks and handling of risk

27. The scope and objective of risk management, measurement and adjustment to risk

28. Linear programming and marginal analysis
29. MOTAD
30. Personal risk management
31. Risk identification - risk evaluation - statistical methods and probability
32. Decision taken under conditions of risks and uncertainty
33. Risk avoidance - risk reduction and loss control - insurance - benefits and limitations
34. Partial insurance - risk management and corporate objectives

Course outcome

At the end of the course students will be able to

1. Demonstrate a working knowledge of the procedures associated with risk management.
2. Perform risk management review for individuals and organizations.
3. Evaluate the use of insurance contracts.
4. Understand the scope and objective of risk management
5. Take decisions under risky situation using various risk management techniques.

Reference books

1. *Crop Insurance*, 1998. Publication of Insurance Institution of India, Mumbai.
2. David, C. and Debertin, 1986. *Agricultural Production Economics*, Mac Millan Publishing Company, New York.
3. *General Insurance*, 2004. Publication of United India Insurance Co, Ltd., Chennai.
4. *General Insurance*, 2004. Publication of Insurance Institution of India, Mumbai.
5. Sankhayan, P.L., 1988. *Introduction to the Economics of Agricultural Production*, Prentice Hall of India, New Delhi.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2	X	X				X				
CO3	X		X					X		
CO4				X				X		
CO5		X	X							X

ABM 713 E2 Communication for Management and Business (2+0)

Learning Objectives

- To make the students proficient in written as well as oral communication
- To understand business related communication aspects

Theory

Unit - I : Communication - introduction

Introduction to communication - communication process - barriers to communication - effective communication. Communication in organisations - downward - upward - horizontal - static vs dynamic communication.

Unit - II : Types of communication

Non-verbal communication - communication through clothes / colours / space/ symbol - body language and etiquettes - interpersonal communication - self-concept and communication - assertive communication.

Unit - III : Business writing

Types of business writing - news letters - reports - folders - fact sheets - press release - readership and writing style - human aspects of writing.

Unit - IV : Meetings

Meetings - planning for meeting - tips for chairing, opening - progress and ending - behaviour of ordinary members - the character of business meeting - energies for meetings - group discussions - brain storming sessions and presentations.

Unit - V : Personal communication

Handling personal communication - letters - dictation - reading - problem solving - listening skills - self talk - self reflection - steps to personal creativity - public speaking. **Current streams of thought**

Theory schedule

1. Introduction to communication
2. Communication process
3. Barriers to communication
4. Effective communication
5. Communication in organizations
6. Downward, upward, horizontal, static Vs dynamic communication
7. Types of communication - non-verbal communication
8. Communication through clothes / colours / space / symbol
9. Body language and etiquettes
10. Interpersonal communication
11. Self-concept and communication
12. Assertive communication
13. Types of business writing
14. News letters, reports
15. Folders, fact sheets
16. Press release
17. **Mid semester examination**
18. Readership and writing style
19. Human aspects of writing
20. Meetings - planning for meeting
21. Tips for chairing, opening, progress and ending
22. Behaviour of ordinary members
23. The character of business meeting
24. Energies for meetings
25. Group discussions
26. Brain storming sessions
27. Presentations
28. Handling personal communication
29. Letters, dictation, reading, problem solving
30. listening skills
31. Self-talk
32. Self-reflection
33. Steps to personal creativity
34. Public speaking

Course outcome

At the end of the course students will be able to

1. Understand the ethical, international, social and professional constraints.
2. Understand the current resources for locating secondary information.
3. Understand the strategies of effective primary data gathering.
4. Develop professional work habits, including those necessary for effective collaboration and cooperation with others.
5. Handle personal communication ways.

Reference books

1. Bovee, 2008. *Business Communication Today*, 7th Ed., Pearson Edu., New Delhi.
2. Brown L., 2006. *Communication Facts and Ideas in Business,* Prentice Hall, New Delhi.
3. James O'Brien, 1999. *Management Information System*, Tata McGraw Hill, New Delhi.
4. Lesikar, 2004. *Basic Business Communication*, McGraw Hill, New Delhi.
5. Ramchandran, K.K., Lakshmi K.K. and K.K. Karthik, 2007. *Business Communication,* MacMillan Publications, New Delhi.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2	X	X				X				
CO3		X		X						
CO4	X	X						X		
CO5	X			X					X	

ABM 713 E3 Management of Agricultural Input Marketing (2+0)

Learning Objectives

- To impart the students an understanding of different marketing concept
- To have a clear understanding of marketing system in context of agricultural inputs

Theory

Unit-I : Agricultural input marketing

Agricultural input marketing - meaning and importance - management of distribution channels for agricultural input marketing. Agricultural Inputs and their types - farm and non-farm - role of cooperatives, public and private sectors in agricultural input marketing.

Unit-II : Seed marketing

Seed - Importance of seed input - types of seeds - hybrid, high yielding and quality seeds - demand for and supply of seeds - seed marketing channels - pricing - export and import of seeds - role of NSC and State Seed Corporation.

Unit-III : Fertilizer Marketing

Chemical fertilizer - production, export-import - supply of chemical fertilizers, demand/consumption - prices and pricing policy - subsidy on fertilizers - marketing system - marketing channels - problems in distribution - role of public, private and cooperative sector in fertilizer marketing.

Unit-IV : Plant protection chemicals and fuel marketing

Plant protection chemicals - production, export/import - consumption, marketing system - marketing channels - electricity/diesel oil - marketing and distribution system - pricing of electricity for agriculture use - subsidy on electricity.

Unit-V : Farm machinery marketing

Farm machinery - production, supply, demand - marketing and distribution channels of farm machines - agro-industries corporations and marketing of farm machines / implements / equipments. **Current streams of thought**

Theory schedule

1. Agricultural input marketing - meaning and importance
2. Management of distribution channels for agricultural input marketing
3. Agricultural inputs and their types - farm and non-farm inputs
4. Role of cooperatives in agri input marketing
5. Role of public sectors in agri input marketing
6. Role of private sectors in agri input marketing
7. Seed - importance of seed input
8. Types of seeds - hybrid, high yielding and quality seeds
9. Demand for and supply of seeds
10. Seed marketing channels
11. Pricing of seeds
12. Export and import of seeds
13. Role of NSC and state seed corporation
14. Chemical fertilizers - production
15. Export-import of chemical fertilizers
16. Supply of chemical fertilizers
17. **Mid semester examination**
18. Demand/consumption of fertilizers
19. Prices and pricing policy of fertilizers
20. Subsidies on fertilizers
21. Marketing system - marketing channels
22. Problems in distribution of fertilizers
23. Role of public, private and cooperative sector in fertilizer marketing
24. Plant protection chemicals - production
25. Export/import of plant protection chemicals
26. Consumption of plant protection chemicals
27. Marketing system - marketing channels in PPC
28. Electricity/diesel oil - marketing and distribution system
29. Pricing of electricity for agriculture use
30. Subsidy on electricity
31. Farm machinery - production, supply, demand
32. Marketing and distribution channels of farm machines
33. Agro-industries corporations
34. Marketing of farm machines / implements / equipments

Course outcome

At the end of the course students will be able to

1. Understand the distribution channels of input marketing.
2. Gain the knowledge about seed and fertilizer marketing.
3. Analyse subsidy on fertilizers and problems in its distribution.
4. Understand the pattern of production of plant protection chemicals.
5. Manage distribution channels of farm machinery.

Reference books

1. Acharya, S.S. and Agarwal N.L., 2004. *Agricultural Marketing in India*, 4th Ed., Oxford and IBH, New Delhi.
2. Broadway, A.C. and Broadway Arif A., 2003. *A Text Book of Agri-Business Management*, Kalyani Publishers, New Delhi.
3. Singh, A.K. and Pandey S., 2005. *Rural Marketing*, New Age Publishers, New Delhi.
4. Singh Sukhpal, 2004. *Rural Marketing- Focus on Agricultural Inputs*, Vikas Publ. House, New Delhi.
5. Philip Kotler, 2006. *Principles of Marketing*, Prentice Hall of India, New Delhi.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X	X					
CO2	X			X		X				
CO3		X	X					X		
CO4		X	X					X		
CO5			X	X						X

ABM 714 E1 International Trade and Sustainability Governance (2+0)

Learning Objective

- To impart knowledge to the students on international trade in agriculture
- To understand various provisions under WTO in the new trade regime

Theory

Unit-I : WTO and agriculture

International trade - basic concepts - WTO and its implications for Indian economy in general and agriculture sector in particular.

Unit-II : Trade agreements

TRIPS, TRIMS, quotas, anti dumping duties - quantitative and qualitative restrictions - tariff and non-tariff measures - trade liberalization - subsidies - green and red boxes - issues for negotiations in future in WTO - CDMs and carbon trade.

Unit-III : Foreign trade

Importance of foreign trade for developing economy - absolute and comparative advantage - foreign trade of India.

Unit-IV : Foreign trade policy

Composition of India's foreign trade policy - India's balance of payments - inter regional Vs international trade - tariffs and trade control - exchange rates - the foreign trade multiplier.

Unit-V : Export procedures

Foreign demand - supply side analysis - opportunity cost - trade and factor prices - implications for developing countries - market entry methods - export procedures and documentations. **Current streams of thought**

Theory schedule

1. International trade - basic concepts
2. WTO and its implications for Indian economy in general
3. Impact of WTO on agriculture sector
4. TRIPS
5. TRIMS
6. Quotas - anti dumping duties
7. Quantitative restrictions on trade
8. Qualitative restrictions on trade
9. Tariff measures
10. Non-tariff measures
11. Trade liberalization
12. Subsidies in trade
13. Green and red boxes
14. Issues for negotiations in future in WTO
15. CDMs and carbon trade
16. Importance of foreign trade for developing economy
17. **Mid semester examination**
18. Absolute and comparative advantage
19. Foreign trade of India
20. Composition of India's foreign trade policy
21. India's balance of payments
22. Inter regional Vs international trade
23. Tariffs and trade control
24. Exchange rates
25. The foreign trade multiplier
26. Foreign demand
27. Supply side analysis
28. Opportunity cost
29. Trade prices
30. Factor prices
31. Implications for developing countries
32. Market entry methods
33. Export procedures
34. Documentations

Course outcome

At the end of the course students will be able to

1. Understand basic concepts of international trade.
2. Compare the relationship between trade, investment and economic growth
3. Identify empirical tests of trade models.
4. Analyse foreign trade policy related to agri business sector.
5. Understand export procedure and way to improve the share of agri in total export.

Reference books

1. Aran Goyal, and Moor Mohamed, 2001. *WTO in the New Millennium*, Academy of Business Studies, New Delhi.
2. Chadha, G.K., 2003. *WTO and Indian Economy*, Deep and Deep, New Delhi.
3. Francis Cherunilam, 2006. *International Trade and Export management*, Himalaya Publishing House, Mumbai.
4. Jhingam, J.L., 2002. *International Economics*, Vrinda Publications, New Delhi.
5. Vasisht, A.K. and Singh Alka., 2003. *WTO and New International Trade Regime-Implication for Indian Agriculture*, Advance Publ. Concept.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2	X	X				X				
CO3		X		X				X		
CO4	X	X						X		
CO5			X	X						X

ABM 714 E2 Commodity Futures Trading (2+0)

Learning Objectives

- To provide a basic understanding on the mechanics and value of futures markets for speculators and hedgers
- To understand price risk management activities of agribusiness firms

Theory

Unit-I : Commodity markets

History and evolution of commodity markets - terms and concept - spot, forward and futures markets - factors influencing spot and future markets. Speculatory mechanism in commodity futures.

Unit-II : Trading strategies

Transaction and settlement - delivery mechanism - role of different agents - trading strategies - potential impact of interest rate. Foreign exchange - FDI in commodity markets.

Unit-III : Risks in commodity trading

Risks in commodity trading - importance and need for risk management measures - managing market price risk - hedging, speculation, arbitrage, swaps - pricing and their features.

Unit-IV : Commodity exchanger

Importance of global and Indian commodity exchanges - contracts traded - special features - regulation of Indian commodity exchanges - FMC and its role.

Unit-V : Technical analysis

Fundamental Vs technical analysis - construction and interpretation of charts and chart patterns for analyzing the market trend - market indicators - back testing. Introduction to technical analysis software - analyzing trading pattern of different commodity groups. **Current streams of thought**

Theory schedule

1. History and evolution of commodity markets
2. Terms and concept
3. Spot markets
4. Forward and future markets
5. Factors influencing spot markets
6. Factors influencing future markets
7. Speculatory mechanism in commodity futures
8. Transaction and settlement
9. Delivery mechanism
10. Role of different agents in trading
11. Trading strategies
12. Potential impact of interest rate
13. Foreign exchange
14. FDI in commodity markets
15. Risks in commodity trading
16. Importance and need for risk management measures
17. **Mid semester examination**
18. Managing market price risk
19. Hedging, speculation
20. Arbitrage, swaps
21. Pricing and their features
22. Importance of global commodity exchanges
23. Importance of Indian commodity exchanges
24. Contracts traded
25. Special features
26. Regulation of Indian commodity exchanges
27. FMC and its role
28. Fundamental Vs technical analysis
29. Construction and interpretation of charts
30. Chart patterns for analyzing the market trend
31. Market indicators
32. Back testing
33. Introduction to technical analysis software
34. Analyzing trading pattern of different commodity groups

Course outcome

At the end of the course students will be able to

1. Understand the speculator mechanism of commodity markets.
2. Gain the knowledge about trading strategies.
3. Manage market price under risks.
4. Understand the importance of global and Indian commodity exchange.
5. Do technical analysis of trading pattern of commodity groups.

Reference books

1. Kaufman, P.J., 1986. *The Concise Handbook of Futures Markets*, John Wiley and Sons, New Delhi.
2. Leuthold, R.M., Junkus J.C. and Cordier J.E., 1989. *The Theory and Practice of Futures Markets*, Lexington Books, London.
3. Lofton, T., 1983. *Getting Started in Futures*, 3rd Ed., John Wiley and Sons, New Delhi.
4. Purcell, W.D., 1991. *Agricultural Futures and Options: Principles and Strategies*, Macmillan Publishing, New Delhi.
5. Wasendorf, R.R. and Mc Cafferty, 1993. *All about Commodities from the Inside Out*, McGraw-Hill, New Delhi.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X	X		X	X					
CO2	X					X				
CO3		X		X				X		
CO4		X		X				X		
CO5	X	X								X

ABM 714 E3 Capital and Commodity Markets (2+0)

Learning Objective

- To enable the students to acquire an overview of the different aspects of capital and commodity trading
- To teach the fundamentals and other factors related to capital market instruments and commodities as well as their prices

Theory

Unit-I : Introduction to capital markets

The basic investment portfolio theory and models - stock exchange and stock trading regulator, securities, participants issue of shares - Initial Public Offering (IPO) and FPO - foreign capital issuance - introduction to secondary markets - products in secondary markets.

Unit-II : Debt investments

Debt investments - derivatives, depository, corporate actions. Index - its calculations, clearing, settlement and redressal, concepts and modes of analysis - ratio analysis.

Unit-III : Introduction to commodity markets

History and evolution of commodity markets - spot, forward and futures market - options, derivative markets - managing market price risk. Hedging, speculation, arbitrage, swaps - concepts of open interest, close out - mark to market practice - margins and its types, strategies using options to hedge risks.

Unit-IV : Commodity exchange regulation

Important global and Indian commodity exchanges - regulation of Indian commodity exchanges - sources of commodity market information - Forward Market Commission (FMC) and its role - Multi Commodity Exchange (MCX) - National Multi Commodity Exchange (NMCE) - National Commodity and Derivatives Exchange Limited (NCDEX) - Risk in commodity trading - importance and need for risk management measures.

Unit-V : Fundamental and technical analysis

Fundamental analysis - demand and supply, trade volume of capital market instruments and commodities - technical analysis - chart reading - candle stick charts (Doji, Marbozu, Hammer) - pie charts, line charts, bar charts, histogram, moving averages, exponential, simple weighted average. **Current streams of thought**

Theory schedule

1. The basic investment portfolio theory
2. The basic investment models
3. Stock exchange and stock trading regulator, securities, participants issue of shares
4. Initial Public Offering (IPO) and FPO
5. Foreign capital issuance
6. Introduction to secondary markets
7. Products in secondary markets
8. Debt investments
9. Derivatives, depository, corporate actions, index - its calculations, clearing, settlement and redressal
10. Concepts and modes of analysis
11. Ratio analysis
12. History and evolution of commodity markets
13. Spot, forward and futures market
14. Options, derivative markets, managing market price risk
15. Hedging, speculation, arbitrage, swaps
16. Concepts of open interest, close out
17. **Mid semester examination**
18. Mark to market practice
19. Margins and its types
20. Strategies using options to hedge risks.
21. Important global and Indian commodity exchanges
22. Regulation of Indian commodity exchanges
23. Sources of commodity market information
24. Forward Market Commission (FMC) and its role
25. Multi Commodity Exchange (MCX)
26. National Multi Commodity Exchange (NMCE)
27. National Commodity and Derivatives Exchange Limited (NCDEX)

28. Risk in commodity trading
29. Importance and need for risk management measures
30. Fundamental Analysis of demand and supply
31. Trade volume of capital market instruments and commodities
32. Technical analysis chart reading, candle stick charts (Doji, Marbozu, Hammer)
33. Pie charts, line charts, bar charts
34. Histogram, moving averages, exponential, simple weighted average

Course outcome

At the end of the course students will be able to

1. Understand the fundamentals of capital and commodity markets.
2. Gain knowledge about debt investment.
3. Manage market price risk in commodity market.
4. Manag commodity exchange understanding risk in trade.
5. Analyse capital market technically using different tools..

Reference books

1. Carter, Colin A., 2003. *Futures and Options Market: An Introduction*, Prentice-Hall: Upper Saddle River, New Jersey.
2. Hull, John C., 2005. *Fundamentals of Futures and Options Markets*, 5th Edition. Prentice Hall: Upper Saddle River, New Jersey.
3. McDonald, Robert L., 2006. *Derivatives Markets*, 2nd Edition, Addison Wesley: Boston.
4. Wayne Purcell and Stephen Koontz., 1999. *Agricultural Futures and Options, Principles and Strategies* (2nd Edition), Prentice-Hall, New Delhi.
5. Wasendorf, R.R., and Mc Cafferty, 1993. *All about Commodities from the Inside Out*, McGraw-Hill, New Delhi.
6. www.ncdex.com
7. www.moneycontrol.com
8. www.commodityonline.com

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2		X		X		X				
CO3		X		X				X		
CO4	X							X		
CO5	X			X						X

STA 613 Statistics for Business Management (2+1)

Learning Objective

- To make the students conversant about the applications of statistics in agri business analysis
- To understand various methods of analysis and interpretation

Theory

Unit - I: Sampling and data collection

Business statistics - definition - scope - functions - limitations - applications. Basic concepts - unit and frame, population and sample - sampling and complete enumeration - probability and non-probability sampling - sampling and non-sampling errors - measurement and control of non-sampling errors. Simple random sampling (SRS) - with and without replacement - Systematic sampling - Stratified random sampling - stratification - cluster sampling - determination of sample size. Collection of data - primary and secondary - methods of collection - drafting questionnaire - sources of data - editing - classification and tabulation of data - diagrammatic and graphical representation.

Unit - II: Theories of distributions

Measures of central value - measures of dispersion - methods of studying variation. Distributions - binomial distribution - poisson distribution - normal distribution - their applications.

Unit - III: Correlation and regression

Simple correlation - meaning - assumptions - positive and negative correlation - scatter diagram - computation of correlation coefficient - properties, testing and interpretation of correlation coefficient - coefficient of determination. Regression theory - simple linear regression - meaning, assumptions - fitting of simple linear regression - properties of regression coefficients - interpretation of regression coefficients and intercept. Multiple linear regression - assumptions - standardized and partial regression coefficients - fitting of multiple linear regression equation - interpretation of regression coefficients - multiple correlation - coefficient of multiple determination (R^2) - interpretation.

Unit - IV: Tests of significance

Test of significance - basic ideas - Type I error, Type II error - test of significance based on small sample - 't' test - testing the significance of single mean - testing the significance of two means for independent samples and paired samples. Large sample tests - testing the significance single mean, two means. Test for regression coefficient - Chi square - test for homogeneity of variance. Goodness of fit tests - 'F' test- one way ANOVA and two way ANOVA.

Unit - V: Nonparametric tests and time series models

Non parametric tests (Distribution free tests) - advantages - disadvantages - run test - test for randomness - median test - sign test - Mann Whitney U test for two samples - Kolmogrov - Smirnov one sample and two sample test, Kruskal - Walli's test - Chi-square. Introduction to time series models - AR - MA - ARMA models - forecasting using SPSS.

Practical

Simple random sample - selection - estimation - determination of sample size in simple random sampling. Systematic sampling - stratified random sampling - cluster sampling - selection - estimation. Frequency distribution - graphical representation - measures of central values - measures of dispersions - applications of binomial distribution - poisson distribution and normal distribution - problems in correlation and regression analysis - partial correlation - multiple correlation and multiple regression. Rank correlation coefficient. Tests of significance for small and large samples and problems - non parametric test - time series analysis - AR, MA and ARMA Models - Forecasting using SPSS - LIMDEP

Theory schedule

1. Business statistics - definition - scope - functions - limitations - applications
2. Basic concepts - unit and frame, population and sample - sampling and complete enumeration
3. Probability and non-probability sampling - sampling and non-sampling errors - measurement and control of non-sampling errors
4. Simple random sampling (SRS) - with and without replacement
5. Systematic sampling - Stratified random sampling - stratification - cluster sampling - determination of sample size
6. Collection of data - primary and secondary
7. Methods of collection - drafting questionnaire
8. Sources of data - editing - classification and tabulation of data
9. Diagrammatic and graphical representation
10. Measures of central value
11. Measures of dispersion
12. Methods of studying variation
13. Binomial distribution - poisson distribution
14. Normal distribution - their applications
15. Simple correlation - meaning - assumptions - positive and negative correlation
16. **Mid semester examinations**
17. Scatter diagram - computation of correlation coefficient
18. Properties, testing and interpretation of correlation coefficient
19. Coefficient of determination
20. Regression theory - simple linear regression - meaning, assumptions
21. Fitting of simple linear regression - properties of regression coefficients
22. Interpretation of regression coefficients and intercept
23. Multiple linear regression - assumptions - standardized and partial regression coefficients
24. Fitting of multiple linear regression equation - interpretation of regression coefficients
25. Multiple correlation - coefficient of multiple determination (R^2) - interpretation
26. Test of significance - basic ideas - Type I error, Type II error - test of significance based on small sample - 't' test - testing the significance of single mean
27. Testing the significance of two means for independent samples and paired samples
28. Large sample tests - testing the significance single mean, two means
29. Test for regression coefficient - Chi square - test for homogeneity of variance
30. Goodness of fit tests - 'F' test- one way ANOVA and two way ANOVA
31. Non-parametric tests (Distribution/free/tests) - advantages - disadvantages
32. Run test - test for randomness - median test - sign test
33. Mann - Whitney U test for two samples - Kolmogrov - Smirnov one sample and two sample test, Kruskal - Walli's test - chi-square
34. Introduction to time series models - AR - MA - ARMA models - forecasting using SPSS.

Practical schedule

1. Simple random sample - selection - estimation
2. Determination of sample size in simple random sampling
3. Systematic sampling - stratified random sampling
4. Cluster sampling - selection - estimation
5. Frequency distribution - graphical representation
6. Measures of central values measures of dispersions
7. Applications of binomial distribution
8. Poisson distribution and normal distribution
9. Problems in correlation and regression analysis
10. Partial correlation
11. Multiple correlation and multiple regression
12. Rank correlation coefficient
13. Tests of significance for small and large samples and problems
14. Non-parametric tests
15. Time series analysis - AR, MA and ARMA Models
16. Forecasting using SPSS
17. LIMDEP

Reference books

1. Agarwal, B.M., 1995. *Basic Statistics*, New Age International Ltd, New Delhi.
2. Gupta, S.C. and V.K. Kapoor, 2004. *Fundamentals of Statistics*, Sultan Chand and Sons, New Delhi.

3. Priestly, M.B., 1981. *Spectral Analysis and Time Series*, Academic Press, New Delhi.
4. Rangasamy, R., 1990. *A Text Book on Agricultural Statistics*, New Age India Ltd, Chennai.
5. Senthamarai Kannan, K. and D. Venkatesan, 2005. *Introduction to Statistical Methods*, Scitech Publications (India) Private Ltd., Chennai.

PGS 611 Research Data Analysis (0+1)

Learning Objective

- To provide the usage of various statistical packages
- To analyse agricultural research data

Practical

Statistical data analysis using MS Excel – creation and usage of excel spread sheet. Descriptive statistics - cross tabulation - one way, two way and multi-way tables - chi square test for socio economic conditions - comparison of means - student's t test - comparing a single mean - comparison of two means - paired and independent t tests - one way ANOVA. F test for testing the equality of variances - correlation coefficient - simple linear regression analysis - multiple linear regression analysis. Mann Whitney U-test - Wilcoxon matched pairs signed rank test - Kruskal Wallis one -way analysis - Friedman two-way analysis – Spearman's rank correlation - Kendall's rank correlation - time series analysis - moving average - exponential smoothing.

Course outcome

At the end of the course students will be able to

1. Use various statistical packages.
2. Identify the variables and models
3. Interpret the results.

Reference books

1. Darren George and Paul Mallery, 2007. *SPSS for Windows Step by Step - A simple guide and reference*, Pearson Education, New Delhi.
2. Leland Wilkinson, Grant Blank and Christian Gruber, 1996. *Desktop Data Analysis with Systat*, Prentice Hall, New Jersey.
3. Ramesh Babu and Samyuktha, 2003. *Computer Practice - I*, V.R.B. Publications, New Delhi.
4. Saxena, 2003. *A first course in Computers*, Vikas Publishing House (P) Ltd., New Delhi.
5. Sharma, K.V.S., 2010. *Statistics Made Simple: Do it yourself on PC,* Prentice Hall of India, New Delhi.

	PSO1	PSO2	PSO3	PSO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1		X		X	X					
CO2		X				X				
CO3			X	X				X		

PGS 623 Basic Analytical Techniques (0+1)

Learning Objective

- To provide the use of the statistical package
- To understand analytical techniques

Practical

Use of SPSS / equivalent for frequency distribution, summarization and tabulation of data, F test, correlation, pearson correlation, spaearman correlation, ANOVA, ANCOVA. For regression: simple, multiple linear regression, estimation of regression by OLS and MLE method, logit, probit, stepwise regression, coefficient of determination. For Kolmogorov - Smirnov test, Wilcoxon signed rank test, Mann-Whitney U, Kruskal-Wallis, McNemar's test. For discriminant analysis - fitting of discriminant functions, identification of important variables, factor analysis, principal component analysis - obtaining principal component. For analysis of time series data - AR, MA, ARIMA models.

Practical schedule

1. Use of SPSS / equivalent for frequency distribution
2. Summarization and tabulation of data
3. F test
4. Correlation, pearson correlation, spearman correlation
5. ANOVA, ANCOVA
6. Regression - simple, multiple linear regression, estimation of regression by OLS and MLE method
7. Logit, probit, stepwise regression
8. Coefficient of determination
9. Kolmogorov - Smirnov test
10. Wilcoxon signed rank test, Mann - Whitney U test
11. Kruskal - Wallis, McNemar's test
12. Discriminant analysis
13. Fitting of discriminant functions
14. Identification of important variables
15. Factor analysis. Principal component analysis
16. Obtaining principal component
17. Time series data AR, MA, ARIMA models

Course outcome

At the end of the course students will be able to

1. Identify the methods to collect data.
2. To do different econometric analysis.
3. Forecast economic variables using AR,MA, and ARIMA models.

Reference books

1. SPSS User's guide and User's manual.
2. Wetherill, G.B., 1982. Elementary Statistical Methods. Chapman & Hall.
3. Wetherill, G.B., 1986. Regression Analysis with Applications. Chapman & Hall.
4. Learning statistics: http://freestatistics.altervista.org/en/learning.php.
5. Free statistical software's: http://freestatistics.altervista.org/en/stat.php.
6. Statistics glossary http://www.cas.lancs.ac.uk/glossary_v1.1/main.html

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1	X			X	X					
CO2		X				X				
CO3			X	X				X		

PGS 715 Intellectual Property and its Management in Agriculture (1+0) (e-course)

Learning Objectives

- To create awareness about intellectual property rights in agriculture
- To explain management of patents, trademark, geographical indications, copy rights, designs, plant variety protection and biodiversity protection
- To understand marketing and commercialization of intellectual properties

Theory

Unit - I: World trade organization - introduction

World Trade Organization - Agreement on Agriculture (AoA) and Intellectual Property Rights (IPR) - importance of intellectual property management - IPR and economic growth - IPR and bio diversity - major areas of concern in intellectual property management - technology transfer and commercialization - forms of different intellectual properties generated by agricultural research.

Unit - II: Patent document

Discovery *versus* invention - patentability of biological inventions - procedure for patent protection - preparatory work - record keeping, writing a patent document, filing the patent document - types of patent application - patent application under the Patent Cooperation Treaty (PCT).

Unit - III: Plant genetic resources

Plant genetic resources - importance and conservation - sui generic system - plant varieties protection and farmers' rights act - registration of extinct varieties - registration and protection of new varieties / hybrids / essentially derived varieties - dispute prevention and settlement - farmers' rights.

Unit - IV: Trademark

Trademark - geographical indications of goods and commodities - copy rights- designs - biodiversity protection.

Unit - V: Benefit sharing

Procedures for commercialization of technology - valuation, costs and pricing of technology - licensing and implementation of intellectual properties - procedures for commercialization - exclusive and non exclusive marketing rights - research exemption and benefit sharing. **Current streams of thought**

Theory schedule

1. World Trade Organization - Agreement on Agriculture (AoA) and Intellectual Property Rights (IPR)
2. Importance of intellectual property management - IPR and economic growth - IPR and bio diversity
3. Major areas of concern in Intellectual property management - technology transfer and commercialization
4. Forms of different intellectual properties generated by agricultural research
5. Discovery versus invention patentability of biological inventions
6. Procedure for patent protection
7. Preparatory work - record keeping, writing a patent document, filing the patent document
8. Types of patent application - patent application under the Patent Cooperation Treaty (PCT)
9. **Mid semester examination**
10. Plant genetic resources - importance and conservation
11. Sui generic system - plant varieties protection and farmers' rights act - registration of extant varieties
12. Registration and protection of new varieties / hybrids / essentially derived varieties - dispute prevention and settlement - farmers' rights
13. Trade mark - geographical indications of goods and commodities - copy rights - designs
14. Biodiversity protection
15. Procedures for commercialization of technology - valuation, costs and pricing of technology
16. Licensing and implementation of intellectual properties - procedures for commercialization
17. Exclusive and non exclusive marketing rights - research exemption and benefit sharing

Course outcome

At the end of the course students will be able to

1. Understand the concepts in international trade.
2. Understand the procedure to obtain patent rights.
3. Identify the way to commercialize intellectual properties

Reference books

1. Arun Goyal and Moor Mohamed, 2001. *WTO in the New Millennium*, Academy of Business Studies, New Delhi.
2. Bilek Debroy, 2004. *Intellectual Property Rights*, BR World of books, New Delhi.
3. Ganguli, P., 2001. *Intellectual Property Rights - Unleashing the KnowledgeEconomy*. Tata McGraw Hill, New Delhi.
4. Narayanan, R., 2006. *Patent Law*, Eastern Law House, New Delhi.
5. Ramappa, T., 2000. *Intellectual Property Rights under WTO - Tasks before India*, Wheeler Publishing, New Delhi.

	PO1	PO2	PO3	PO4	PO1	PO2	PO3	PO4	PO5	PO6
CO1			X		X					
CO2	X			X		X				
CO3				X				X		