



# **FACULTY OF POST GRADUATE STUDIES**

Courses for the Post Graduate Programme  
MBA in Agri-Business  
[As per ICAR Fourth Dean's committee recommendations]



**Post Graduate Institute of Agri-Business Management  
Junagadh Agricultural University  
Junagadh - 362 001.  
(Gujarat) India.**



**Post Graduate Institute of Agri-Business Management**  
**Junagadh Agricultural University**  
**Junagadh - 362 001. (Gujarat) India.**  
**Tel. +91 285 2670803**  
**E-mail : [pri.pgiabm@jau.in](mailto:pri.pgiabm@jau.in)**

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**FACULTY OF POST GRADUATE STUDIES**  
**COURSES FOR THE**  
**POST GRADUATE PROGRAMME**  
**MBA IN AGRI-BUSINESS**



**AS PER ICAR FOURTH DEAN'S COMMITTEE**  
**RECOMMENDATIONS**

**POST GRADUATE INSTITUTE OF AGRI-BUSINESS MANAGEMENT**  
**JUNAGADH AGRICULTURAL UNIVERSITY**  
**JUNAGADH – 362001**

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<b>AGRIBUSINESS MANAGEMENT</b>		
<b>Course Structure – at a Glance MBA (Agri-Business)</b>		
<b>CODE</b>	<b>COURSE TITLE</b>	<b>CREDITS</b>
<b>CORE COURSES + SEMINAR</b>		<b>TOTAL 29</b>
ABM 501	PRINCIPLES OF MANAGEMENT AND ORGANIZATIONAL BEHAVIOUR	2+1
ABM 502	AGRIBUSINESS ENVIRONMENT & POLICY	2+0
ABM 503	MANAGERIAL ECONOMICS	2+1
ABM 504	MANAGERIAL ACCOUNTING AND CONTROL	1+1
ABM 505	COMMUNICATION FOR MANAGEMENT & BUSINESS	1+1
ABM 506	BUSINESS LAWS AND ETHICS	2+0
ABM 507	MARKETING MANAGEMENT	2+1
ABM 508	HUMAN RESOURCE MANAGEMENT	2+0
ABM 509	FINANCIAL MANAGEMENT	1+1
ABM 510	PRODUCTION AND OPERATIONS MANAGEMENT	2+0
ABM 511	RESEARCH METHODOLOGY IN BUSINESS MANAGEMENT	2+1
ABM 512	PROJECT MANAGEMENT AND ENTREPRENEUSHIP DEVELOPMENT	1+1
ABM 591	MASTER'S SEMINAR	0+1
ABM 595	SUMMER TRAINING/INDUSTRIAL ATTACHMENT**	S/US
<b>BASIC SUPPORTING (COMPULSORY)</b>		<b>TOTAL 6</b>
ABM 513	COMPUTERS FOR MANAGERS	1+1
ABM 514	MANAGEMENT INFORMATION SYSTEM	2+0
ABM 515	OPERATIONS RESEARCH	1+1
<b>PROJECT</b>		<b>TOTAL 10</b>
ABM 599	PROJECT**	0+10
<b>ELECTIVE COURSES</b>		<b>TOTAL - MINIMUM 10, MAXIMUM 20</b>
ABM 516	RURAL MARKETING	2+0
ABM 517	AGRICULTURAL MARKETING MANAGEMENT	1+1
ABM 518	FOOD TECHNOLOGY & PROCESSING MANAGEMENT	1+1
ABM 519	FERTILISER TECHNOLOGY & MANAGEMENT	2+0
ABM 520	MANAGEMENT OF AGRO-CHEMICAL INDUSTRY	2+0
ABM 521	FARM BUSINESS MANAGEMENT	1+1
ABM 522	SEED PRODUCTION TECHNOLOGY MANAGEMENT	2+0
ABM 523	TECHNOLOGY MANAGEMENT FOR LIVESTOCK PRODUCTS	2+0
ABM 524	FRUIT PRODUCTION & POST HARVEST MANAGEMENT	2+0
ABM 525	FARM POWER & MACHINERY MANAGEMENT	1+1
ABM 526	INTERNATIONAL TRADE & SUSTAINABILITY GOVERNANCE	2+0
ABM 527	MANAGEMENT OF AGRI-BUSINESS CO-OPERATIVES	2+0
ABM 528	AGRIBUSINESS FINANCIAL MANAGEMENT	1+1
ABM 529	FOOD RETAIL MANAGEMENT	2+0
ABM 530	MANAGEMENT OF AGRICULTURAL INPUT MARKETING	1+1
ABM 531	FEED BUSINESS MANAGEMENT	2+0
ABM 532	AGRI-SUPPLY CHAIN MANAGEMENT	2+0
ABM 533	MANAGEMENT OF VETERINARY HOSPITALS	2+0
ABM 534	POULTRY AND HATCHERY MANAGEMENT	2+0
ABM 535	MANAGEMENT OF FLORICULTURE AND LANDSCAPING	2+0
ABM 536	QUALITY MANAGEMENT	2+0
ABM 537	COMMODITY FUTURE MARKETS AND DERIVATIVES	2+0

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### COMPULSORY NON-CREDIT COURSES

Sr. No.	CODE	COURSE TITLE	CREDITS
1.	PGS 501	LIBRARY AND INFORMATION SERVICES	0+1
2.	PGS 502	TECHNICAL WRITING AND COMMUNICATIONS SKILLS	0+1
3.	PGS 503 (e-Course)	INTELLECTUAL PROPERTY AND ITS MANAGEMENT IN AGRICULTURE	1+0
4.	PGS 504 (e-Course)	AGRICULTURAL RESEARCH, RESEARCH ETHICS AND RURAL DEVELOPMENT PROGRAMMES	1+0
5.	PGS 505 (e-Course)	DISASTER MANAGEMENT	1+0

\* The bifurcation of credit hours in theory, practical, tutorials etc. will be as per the need of the course and Institutes/Universities. In the courses where practical are not provided / possible, tutorials will be required (1 to 2 contact hours) depending on the course need to take care of case discussions / presentations / role plays / business games

\*\* To be completed in companies after the completion of 1st year (6-8 weeks) duration

\*\*\* Elective courses will be offered to the students in 2nd year of the programme, subject to Minimum of 10 credits and maximum 20 credits. Institutions / Universities may club together similar elective courses to form specialized elective areas.

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## SEMESTER WISE COURSE BREAK UP FOR MBA (AB)

### FIRST SEMESTER:

Sr. no.	Course No.	Title of the course	Credit
1.	ABM 501	Principles of Management and Organizational Behavior	3(2+1)
2.	ABM 503	Managerial Economics	3(2+1)
3.	ABM 504	Managerial Accounting and Control	2(1+1)
4.	ABM 505	Communication for Management & Business	2(1+1)
5.	ABM 508	Human Resource Management	2(2+0)
6.	ABM 510	Production and Operations Management	2(2+0)
7.	ABM 513	Computers for Managers	2(1+1)
8.	ABM 515	Operations Research	2(1+1)
9.	PGS 501	Library and Information Services	0+1
10.	PGS 502	Technical Writing and Communications Skills	0+1
		<b>TOTAL</b>	<b>18+2</b>

### SECOND SEMESTER:

Sr. no.	Course No.	Title of the course	Credit
1.	ABM 502	Agribusiness Environment & Policy	2+0
2.	ABM 506	Business Laws And Ethics	2+0
3.	ABM 507	Marketing Management	2+1
4.	ABM 509	Financial Management	1+1
5.	ABM 511	Research Methodology In Business Management	2+1
6.	ABM 512	Project Management And Entrepreneurship Development	1+1
7.	ABM 591	Master's Seminar	0+1
8.	ABM 514	Management Information System	2+0
9.	PGS 503	Intellectual Property And Its Management In Agriculture	1+0
10.	PGS 504	Agricultural Research, Research Ethics And Rural Development Programmes	1+0
11.	PGS 505	Disaster Management	1+0
		<b>TOTAL</b>	<b>17+3</b>
12.	ABM 595	Summer Training/Industrial Attachment**	S/US

## **THIRD SEMESTER:**

<b>Sr. no.</b>	<b>ELECTIVE COURSES</b>		<b>TOTAL - MINIMUM 10, MAXIMUM 20</b>
1.	ABM 516	Rural Marketing	2+0
2.	ABM 517	Agricultural Marketing Management	1+1
3.	ABM 518	Food Technology & Processing Management	1+1
4.	ABM 519	Fertilizers Technology & Management	2+0
5.	ABM 520	Management of Agro-Chemical Industry	2+0
6.	ABM 521	Farm Business Management	1+1
7.	ABM 522	Seed Production Technology Management	2+0
8.	ABM 523	Technology Management For Livestock Products	2+0
9.	ABM 524	Fruit Production & Post Harvest Management	2+0
10.	ABM 525	Farm Power & Machinery Management	1+1
11.	ABM 526	International Trade & Sustainability Governance	2+0
12.	ABM 527	Management of Agri-Business Co-Operatives	2+0
13.	ABM 528	Agribusiness Financial Management	1+1
14.	ABM 529	Food Retail Management	2+0
15.	ABM 530	Management of Agricultural Input Marketing	1+1
16.	ABM 531	Feed Business Management	2+0
17.	ABM 532	Agri-Supply Chain Management	2+0
18.	ABM 533	Management of Veterinary Hospitals	2+0
19.	ABM 534	Poultry and Hatchery Management	2+0
20.	ABM 535	Management of Floriculture and Landscaping	2+0
21.	ABM 536	Quality Management	2+0
22.	ABM 537	Commodity Future Markets and Derivatives	2+0

## **FOURTH SEMESTER:**

<b>PROJECT</b>		<b>TOTAL 10</b>
ABM 599	PROJECT**	0+10

\*\* To be completed in companies after the completion of 1st year (6-8 weeks) duration

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## CORE COURSES

### **ABM 501 PRINCIPLES OF MANAGEMENT AND ORGANIZATIONAL BEHAVIOUR (2+1)**

#### **Objective**

To acquaint the learner with meaning and concepts of management and organizational behaviour. Focus will be on understanding the concepts, processes, significance, and role of management and organizational behaviour.

#### **Theory**

##### **UNIT I**

Nature, Scope and Significance of Management, Evolution of Management Thought, Approaches to Management, Functions of a Manager, Planning - Types, Steps, Course Objective, Process, Strategies, Policies, MBO, Strategic Planning Process, SWOT analysis, Organizing – Structure & Process, Line Staff, Authority & responsibility.

##### **UNIT II**

Staffing – Selection process, Directing – Training, Communication & motivation, Controlling-Significance, Process, Techniques, Standards & Benchmarks, Management Audit.

##### **UNIT III**

Nature, Scope and Significance of Organizational Behavior; Evolution and Historical Background of Organizational Behavior; Models of Organizational Behaviour Foundations of individual behaviour, Diversity, Micro Organizational behavior - Personality, self-concept, self-esteem and Self-Efficacy; Attitudes, learning, Perception, Power – types & structures.

##### **UNIT IV**

Motivation- Types of motivation: Maslow's need hierarchy and Vroom's expectancy theory. Theories of motivation, Applications of motivation. Transactional analysis-Johari window-self fulfilling prophecy, Interpersonal relations-understanding, determinants, and developing; leadership styles and influence process; leadership theories; types of leaders, and effective leader; group dynamics-, types of groups, group formation, Group decision making, Team Building.

##### **UNIT V**

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

#### **Practical**

SWOT analysis of agriculture, dairy products and food processing, study on different types of organization, case study on management, strategy management, motivation: case and practices, benchmark and standard of ISI, ISO and different certification, organization behavior: case study, micro and macro environment, personality, transaction analysis, group discussion and team building, business ethics: case study.

#### **Suggested Readings**

- Fred Luthans 1998. *Organizational Behavior*. Tata McGraw Hill.  
Harold Koontz & Keing Weighhrich. *Essentials of Management*. McGraw Hill.  
John W Newstrom & Keith Davis. 1997. *Human Behaviour at Work*. Tata McGraw.  
Robert C Appleby. 1997. *Modern Business Administration*. Macmillan India.  
Stephen P Robbins 2007. *Organizational Behaviour*. Prentice Hall.  
Stoner James AF. 2005. *Management*. Pearson Edu.



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## **ABM 502 AGRIBUSINESS ENVIRONMENT AND POLICY (2+0)**

### **Objective**

To expose learners to the environment in which the agri-business is conducted. Focus will be on understanding micro and macro environmental forces and their impact on agri-business.

### **Theory**

#### **UNIT I**

Role of agriculture in Indian economy; problems and policy changes relating to farm supplies, farm production, agro processing, agricultural marketing, agricultural finance etc. in the country.

#### **UNIT II**

Structure of Agriculture - Linkages among sub-sectors of the Agribusiness sector; economic reforms and Indian agriculture; impact of liberalization, privatization and globalization on Agri business sector.

#### **UNIT III**

Emerging trends in production, processing, marketing and exports; policy controls and regulations relating to the industrial sector with specific reference to agro-industries.

#### **UNIT IV**

Agribusiness policies- concept and formulation; and new dimensions in Agri business environment and policy.

#### **UNIT V**

Agricultural price and marketing policies; public distribution system and other policies.

### **Suggested Readings**

- Adhikary M. 1986. *Economic Environment of Business*. S. Chand & Sons.  
Aswathappa K. 1997. *Essentials of Business Environment*. Himalaya Publ.  
Francis Cherunilam 2003. *Business Environment*. Himalaya Publ.

## **ABM 503 MANAGERIAL ECONOMICS (2+1)**

### **Objective**

To familiarize the students with the fundamental economic concepts and principles in the context of managerial decision making.

### **Theory**

#### **UNIT I**

Scope of managerial economics, objective of the firm and basic economic principles; mathematical concepts used in managerial economics.

#### **UNIT II**

Demand analysis - meaning, types and determinants of demand; demand function; demand elasticity; demand forecasting-need and techniques.

#### **UNIT III**

Production, cost and supply analysis- production function, least-cost input combination, factor productivities and returns to scale, cost concepts, cost-output relationship, short and long-run supply functions.

#### **UNIT IV**

Pricing-determinants of price - pricing under different market structures, pricing of joint products, pricing methods in practice, government policies and pricing. ,

#### **UNIT V**

The theory of national income & employment; circular flow of income: consumption, investment and saving: money-functions, demand & supply; inflation; economic growth; business cycles and business policies; business decisions under uncertainty.

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## **Practical**

Demand schedule and demand analysis for various products and situations; Measurement of elasticity of demand; Demand forecasting; Supply function and elasticity of supply; Cost analysis; Law of returns and return to scale; Equilibrium of the firm under different market categories; Revenue schedule and break even analysis; Capital budgeting; Input-output analysis.

## **Suggested Readings**

Baumol WJ. 1980. *Economic Theory and Operations Analysis*. Prentice Hall of India.  
Craig PH & Chris LW. 1996. *Managerial Economics*. Prentice Hall of India.  
Dernberg TF. et. al. 1986. *Macro Economics: Concepts, Theories and Policies*. McGraw Hill.  
Dwivedi DN. 2002. *Managerial Economics*. Vikash Publ.  
Gupta GS. 1997. *Managerial Economics*. Tata McGraw Hill.  
Koutsoyiannis A. 1989. *Modern Micro Economics*. Mac Millan Press.

## **ABM 504 MANAGERIAL ACCOUNTING AND CONTROL (1+1)**

### **Objective**

The objective of this course is to expose the learner to the concept and methods of financial and management accounting. Focus will be on understanding techniques, uses and applications of financial and management accounting.

### **Theory**

#### **UNIT I**

Financial Accounting- Meaning, Need, Concepts and Conventions; Branches of Accounting, Internal and External Users of Accounting, Advantages and Limitations of Financial Accounting, Accounting Standards.

#### **UNIT II**

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 of Company Accounts.

#### **UNIT III**

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.

#### **UNIT IV**

Cost Accounting – Nature, Course Objective, Significance of Cost Accounting; Classification of Cost, Costing for Material, Labour, and Overheads; Marginal Costing and 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**

Responsibility Accounting- Its Meaning and Significance, Cost, Profit and Investment Centres, 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.

## **Practical**

Cost in Agribusiness; Survey of the techniques used for cost reduction in agriculture sector; Preparation of cost sheet for single costing; Preparation of cost sheet for Job costing; Marginal costing; Analysis of Breakeven Point; Group Discussion for Margin of safety for Agri industries; Formulation of budget;

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Preparing Functional budget; Preparing Fixed budget; Preparing Flexible budget; Group Discussion of Budget control; Evaluation of Standard costing; Case study related to Managerial accounting in agribusiness

### **Suggested Readings**

Hornngren. 2008. *Introduction to Financial Accounting*. 8th Ed. Pearson Edu.

Khan MY & Jain PK. 2004. *Management Accounting*. Tata McGraw Hill.

Maheshwari SN & Maheshwari SK. 2003. *Financial Accounting*. 3rd Ed. Vikas Publ. House.

## **ABM 505 COMMUNICATIONS FOR MANAGEMENT AND BUSINESS (1+1)**

### **Objective**

The course aims to make students proficient in written as well oral communication. The focus will be on business related communication.

### **Theory**

#### **UNIT I**

Introduction to communication, Communication process, Barriers to Communication, Effective Communication, types of communication in organisations viz. Downward, Upward, Horizontal, Static Vs dynamic.

#### **UNIT II**

Non-Verbal Communication, Communication through clothes/ colours / space/ symbol, Body language and etiquettes, Interpersonal Communication, Self-concept and communication, Assertive Communication.

#### **UNIT III**

Types of business writing viz, News letters, Reports, Folders, Fact Sheets, Press release; Readership and writing style - human aspects of writing.

#### **UNIT IV**

Meetings - Planning for meeting, tips for chairing, opening, progress & ending, Behavior of ordinary members, the character of business meeting, Energies for meetings, Group discussions, brain storming sessions and presentations.

#### **UNIT V**

Handling personal communication - Letters, dictation, reading, problemsolving, listening skills, self-talk, self - reflection, steps to personal creativity, public speaking, Business etiquette.

### **Practical**

Communication barriers and its impact; Implication of downward, upward and horizontal communication; Audio-visual presentation of non verbal communication; Organizational communication; Business letter writing; Resume writing; Fake corporate meeting; Fake interview; Presentation on written communication; Communication structure in organization; Business to business etiquette

### **Suggested Readings**

Bovee. 2008. *Business Communication Today*. 7th Ed. Pearson Edu.

Brown L. 2006. *Communication Facts and Ideas in Business*. Prentice Hall.

Lesikar. 2004. *Basic Business Communication*. McGraw Hill.

Ramchandran KK, Lakshmi KK & Karthik KK. 2007. *Business Communication*. Macmillan.

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## **ABM 506 BUSINESS LAWS AND ETHICS (2+0)**

### **Objective**

The objective of this course is to expose the learner to various ethical issues and laws affecting business. Focus will be on understanding provisions of various business laws and also ethical practices to conduct the business properly.

### **Theory**

#### **UNIT I**

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

#### **UNIT II**

Companies Act-1956: incorporation, commencement of business, types of companies, management, winding of companies, Negotiable Instruments Act.

#### **UNIT III**

Essential Commodities Act, APMC Act, Consumer Protection Act, RTI Act, MRTP Act- major provisions and implications.

#### **UNIT IV**

Factory Act, Labour laws, Industrial dispute Act.

#### **UNIT V**

Nature and importance of ethics and moral standards; corporations and social responsibilities, scope and purpose of business ethics; Ethics in business functional areas; industrial espionage; solving ethical problems; governance mechanism.

### **Suggested Readings**

- Gulshan SS & Kapoor GK. 2003. *Business Law including Company Law*. 10th Ed. New Age Publ.  
Kapoor ND. 2005. *Business Law*. S. Chand & Sons.  
Tulsain PC. 2006 *Business Law*. Tata McGraw Hill.  
Tuteja SK. 2005. *Business Law for Managers*. S. Chand & Sons.

## **ABM 507 MARKETING MANAGEMENT (2+1)**

### **Objective**

The objective of this course is to develop an understanding of the field of marketing. The focus will be on imparting knowledge of the basic concepts, tools, and functions of marketing.

### **Theory**

#### **UNIT I**

The Concept of Marketing Management; Marketing Environment; Marketing Mix, Strategic Marketing, Market Segmentation, Targeting, and Positioning; Buyer Behavior, Marketing Information System, Marketing Organization and Control

#### **UNIT II**

Marketing potential and forecasting, Classification of Products; Product Life Cycle; New Product Development; Product Line and Product Mix; Branding, Packaging and labeling.

#### **UNIT III**

Factors affecting prices; Pricing Policies and Strategies; Pricing Methods.

#### **UNIT IV**

Types of Distribution Channels; Functions of Channel Members; Channel Management Decisions.

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## UNIT V

Promotion Mix; Introduction to Advertising, Personal Selling, Sales Promotion, Publicity and Public Relations. and Direct marketing, managing integrated marketing promotion, Customer Relationship Management.

### **Practical**

Preparation of marketing mix strategy, Identification of market segment, market forecasting, new product development, procedure for standard packaging and labeling, sales promotion of a product, preparation of advertising, publicity of a product, Visit to agricultural industry to understand factor affecting pricing policy and market strategy, case studies on marketing management.

### **Suggested Readings**

Brassington 1997. *Marketing Management*. Pitman Publ. House.

Kotler P. 2002. *Marketing Management – Analysis, Planning, Implementation and Control*. Pearson Edu.

McCarthy 2003. *Marketing Management*. Tata McGraw-Hill.

Saxena R. 2002. *Marketing Management*. Mc Graw Hill.

Stanton WJ, Etzel MJ & Walker BJ. 1996. *Fundamentals of Marketing*. McGraw-Hill.

## **ABM 508 HUMAN RESOURCE MANAGEMENT (2+0)**

### **Objective**

The objective of this course is to expose the learner to the field of human resource management. The focus will be on human resource practices and their utility for managers.

### **Theory**

#### **UNIT I**

Introduction to Human Resources 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 Process, Induction, Training and Human Resource Development-Nature, Significance, Process and Techniques, Internal mobility including Transfers, Promotions, employee separation.

#### **UNIT III**

Performance Appraisal – Significance and methods, Compensation management, Wage and Salary Administration - Course Objective; Wage Fixation; Fringe Benefits, Incentive Payment, bonus, and Profit Sharing.

#### **UNIT IV**

Industrial Relations-Role and Status of Trade Unions; Collective Bargaining; Worker's Participation in Management, Career planning and employee retention.

#### **UNIT V**

Quality of work life, employee welfare measure, Disputes and grievance Handling Procedures; Arbitration and Adjudication; Health and Safety of Human Resources; Human Resources accounting, Human Resources outsourcing.

#### **Unit-VI**

Nature of e HRM - e HR - e HR activities - e Recruitment - e Selection - e Performance management - e Learning - e Compensation

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### **Suggested Readings**

- Ashwathapa K. 1997. *Human Resource Management*. Tata McGraw.
- Flippo EB. 1984. *Personnel, Management*. McGraw-Hill.
- Garry D. 2001. *Human Resource Management*. 7th Ed. Prentice-Hall of India.
- Mamoria CB. 1996. *Personnel Management*. Himalaya Publ. House.
- Subba Rao P. 2004. *Essentials of Human Resource Management and Industrial Relations*. Himalaya Publ. House.
- Venkantavatnam CS & Srivastav BK. 1991. *Personnel Management and Human Resources*. Tata McGraw-Hill.

### **ABM 509 FINANCIAL MANAGEMENT (1+1)**

#### **Objective**

The course aims to make students proficient in concepts and techniques of financial management. Focus will be on developing understanding of the application of Financial and investment decisions.

#### **Theory**

##### **UNIT I**

Introduction to Financial Management, Its meaning and functions, Interface of financial management with other functional areas of a business. Financial Statements and Analysis - Proforma Balance Sheet and Income Statements, ratio, time series, common size and Du-Pont analysis.

##### **UNIT II**

Capital Structure, Determinants of size and composition of Capital Structure, Capital Structure Theories; Long term financing and Cost of Capital.

##### **UNIT III**

Working Capital Management, Determinants of Size and Composition of Working Capital, Cash and receivables management, Working Capital Management Theories, Financing of Working Capital.

##### **UNIT IV**

Financial planning and Forecasting, Financial planning for mergers & acquisition, Capital Budgeting, Undiscounted and Discounted cash flow methods of Investment Appraisal; Hybrid finance and lease finance.

##### **UNIT V**

Business Financing System in India, Money and Capital Markets, Regional and All - India Financial Institutions; venture capital financing and its stages, micro finance and International financial management.

#### **Practical**

Role of finance in agri-industries; preparation of financial statement, balance sheet, Income statement; Ratio analysis; working capital cycle; Cash budgeting in business; Capital structure of the company; Balancing money market for the company; Calculation of lease finance; Group discussion of international finance; Visit to micro finance institute; Capital budgeting; Cash flow & fund flow; Visiting financial institution

### **Suggested Readings**

- Chandra P. 2000. *Financial Management*. Tata McGraw Hill.
- Khan MY & Jain PK. 2004. *Financial Management: Text, Problems and Cases*. Tata McGraw Hill.
- Pandey IM. 1997. *Financial Management*. Vikas Publ.
- Ramachandran N & Kakani RK. 2005. *Financial Accounting for Management*. Tata McGraw Hill.
- Van Horne JC. 1997. *Financial Management and Policy*. Prentice Hall.

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## **ABM 510 PRODUCTION AND OPERATIONS MANAGEMENT (2+0)**

### **Objective**

The objective of this course is to expose the learner to the field of production and operations management. The focus will be on imparting knowledge of the basic concepts, tools, and functions of production management.

### **Theory**

#### **UNIT I**

Nature and Scope of Production and Operations Management; Its relationship with Other Systems in the Organization; Factors Affecting System and Concept of Production and Operation Management; Facility location, Types of Manufacturing Systems and Layouts, Layout Planning and Analysis.

#### **UNIT II**

Productivity Variables and Productivity Measurement, Production Planning and Control, Mass Production, Batch Production, Job Order Manufacturing, Product Selection, Product Design and Development, Process Selection, Capacity planning.

#### **UNIT III**

Scheduling, Maintenance Management Concepts, Work Study, Method Study, Work Measurement, Work Sampling, Work Environment, Industrial Safety,

#### **UNIT IV**

An Overview of Material Management, Determination of Material Requirement, Purchase Management, Store Management, Logistics management, Material Planning and Inventory management, JIT, Safety Management .

#### **UNIT V**

Quality Assurance, Accepting Sampling, Statistical Process Control, Total Quality Management, ISO standards and their Importance, Introduction to re-engineering, value engineering.

### **Suggested Readings**

Adam & Ebert. 2006. *Production and Operations Management: Concepts, Models and Behaviour*. 5th Ed. Prentice Hall of India.

Buffa ES. 2008. *Modern Production/Operations Management*. Wiley India.

Stevenson WJ. 2005. *Operations Management*. Tata McGraw Hill.

## **ABM 511 RESEARCH METHODOLOGY IN BUSINESS MANAGEMENT (2+1)**

### **Objective**

The objective of this course is to develop an understanding of research methodology. The focus will be on process and techniques of research.

### **Theory**

#### **UNIT I**

Meaning, Course Objective, types, and process of research; research methodology in management-exploratory, descriptive, experimental, diagnostic, Problem formulation, setting of Course Objective, formulation of hypotheses.

#### **UNIT II**

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**

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Concept of Sampling, 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**

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**

Index Numbers, Hypothesis testing, ANOVA, Factor analysis, cluster analysis, conjoint analysis, multi-dimensional analysis etc, Report writing: Types of report, essentials and contents of good report writing.

### **Practical**

Data management: collection of primary and secondary data, classification, tabulation, analysis, interpretation; Practical application of different sampling techniques; Frequency distribution; Different measures of central tendency; Different measures of dispersion; Correlation and regression; Analysis of variance (ANOVA); Factor analysis and cluster analysis; Report writing

### **Suggested Readings**

Cooper DR & Schindler PS. 2006. *Marketing Research Concepts and Cases*. Tata McGraw Hill.  
Green PE, Tull DS & Albaum G. 1998. *Research for Marketing Decisions*. Prentice Hall of India.  
Kothari CR. 1989. *Research Methodology*. Wiley Eastern.  
Wilkinson & Bhandarker 1989. *Research Methods in Social Sciences*. Himalaya Publ. House.

## **ABM 512 PROJECT MANAGEMENT AND ENTREPRENEURSHIP DEVELOPMENT (1+1)**

### **Objective**

The objective of this course is to expose the learner to the fields of project management and entrepreneurship development. Focus will be to train the students to develop new projects and encouraging them to start their own ventures.

### **Theory**

#### **UNIT I**

Concept, characteristics of projects, types of projects, project identification, and Project's life cycle.

#### **UNIT II**

Project feasibility- market feasibility, technical feasibility, financial feasibility, and economic feasibility, social cost-benefit analysis, project risk analysis.

#### **UNIT III**

Network Methods: Meaning, Network Analysis, Requirements for Network Analysis, Critical Path Method (CPM), Programme Evaluation and Review Technique (PERT), Project scheduling and resource allocation.

#### **UNIT IV**

Financial appraisal/evaluation techniques- discounted/non-discounted cash flows; Net present values, profitability index, Internal rate of returns; Cost benefits ratio; Accounting rate of return, Pay back period, Project implementation; Cost over run, Project control and information system.

#### **UNIT V**

Entrepreneurship, Significance of entrepreneurship in economic development qualities of entrepreneur, entrepreneurship development programs and role of various institutions in developing entrepreneurship, life cycles of new business, environmental factors affecting success of a new business, reasons for the



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failure and visible problems for business, Developing effective business plans, Procedural steps in setting up of an industry.

### **Practical**

Project identification, social cost-benefit analysis, project risk analysis. Network Analysis, Requirements for Network Analysis, Critical Path Method (CPM), Programme Evaluation and Review Technique (PERT), Project scheduling and resource allocation. Financial appraisal/evaluation techniques- discounted/non-discounted cash flows; Net present values, profitability index, Internal rate of returns; Cost benefits ratio; Accounting rate of return, Payback period, Developing effective business plans.

### **Suggested Readings**

- Chandra P. 2005. *Project Management*. Tata McGraw Hill.  
Gopal Krishan P & Nagarajan K. 2005. *Project Management*. New Age.  
Hisrich RD & Peters MP. 2002. *Entrepreneurship*. Tata McGraw Hill.  
Kaplan JM. 2003. *Patterns of Entrepreneurship*. John Wiley & Sons.  
Nandan H. 2007. *Fundamentals of Entrepreneurship Management*. Prentice Hall.  
Ramamoorthy VE. 2005. *Textbook of Project Management*. MacMillan.

## **BASIC SUPPORTING COURSES**

### **ABM 513 COMPUTERS FOR MANAGERS (1+1)**

#### **Objective**

The course objective is to acquaint the students with the knowledge and use of computers and simple applications of computers in managerial decisions. Effort will also be made to provide them an orientation about the increasing role of computers in corporate/business world.

#### **Theory**

##### **UNIT I**

Concept of Computers- Brief History of Computers, Generation and Its Evolution, Characteristics of Computers, Hardware and Software, introduction to computer languages, Main Areas of Computers and their Applications; Types of Computers – Analog, Digital, Hybrid, General Purpose and Special Purpose Computers, Micro Computers, Mini- Computers, Main-frame Computers, and Super Computers.

##### **UNIT II**

Input-Output Devices, Storage Units ( Disks, CD-ROM, DVD-ROM, Blue Ray Disk and tapes), Memory Types ( Cache, RAM, ROM), Memory Units, Generation and types of Microprocessor.

##### **UNIT III**

Data and Information – Data Definition, Data Processing Systems, Data Type Numeric, Alphabetic, Audio, Graphic, and Video and Their Presentation; Data Processing- Introduction to Data Processing, Computer

as a Tool For Data Processing, Data Processing Cycle, Data Processing Techniques, Data Analysis, Data Inputs and Outputs, Data Processing Management, , Data Security.

##### **UNIT IV**

Introduction to Operating Systems, MS Windows, and UNIX, MS Office (MS Word, MS Power Point, MS Excel, MS-Access and use of various management software's Like SPSS.

##### **UNIT V**

Introduction to LAN, WAN, MAN, internet and search engines; Introduction to agri-portals like agriwatch.com, agmarknet.nic.in, echaupal.com

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### **Practical**

Introduction to computer; Computers hardware and software; Input-output devices; Introduction to operating system; Introduction to windows; MS Office (MS Word); MS Office (Power Point); MS Office (MS Excel); MS Office (MS Access); Internet, LAN, WAN, MAN and E-mail; Use of various software like SPSS, XL-STAT; Data Processing; Data management; Data cycle, techniques and analysis; Data security; Introduction to agri-portals like agriwatch.com

### **Suggested Readings**

Lucas. 2004. *Information Technology for Management*. McGraw Hill.  
Norton P. 1998. *Introduction to Computers*. 2nd Ed. Tata McGraw Hill.  
Rajaraman V. 2006. *Introduction to Information Technology*. Prentice Hall of India.

## **ABM 514 MANAGEMENT INFORMATION SYSTEMS (2+0)**

### **Objective**

The objective of this course is to develop an understanding and utility of MIS. The focus will be on imparting knowledge of the basic concepts, development, functions and usage of MIS.

### **Theory**

#### **UNIT I**

The concept of MIS – Definition, importance, Course Objective, prerequisites, advantages and challenges; Information Needs of organization, MIS and Decision – Making.

#### **UNIT II**

Types/Classification of Information System for organizations – Office Automation Systems, Transaction Processing Systems, Decision Support System, Executive Support System, Knowledge Based Expert System.

#### **UNIT III**

Applications of MIS in the areas of Human Resource Management, Financial Management, Production/Operations Management, Materials Management, Marketing Management.

#### **UNIT IV**

Development of MIS for an organization – The concept and stages of System Development Life Cycle.

#### **UNIT V**

Information Technology– concept, applications, advantages and prerequisites, Choice of Information Technology, Social and Legal Dimension of IT.

### **Suggested Readings**

James O'Brien 1999. *Management Information System*. Tata McGraw-Hill.  
Lauden & Lauden. 2003. *Management Information System*. Pearson Edu.

## **ABM 515 OPERATIONS RESEARCH (1+1)**

### **Objective**

The objective of this course is to acquaint the learner with the applications of some important Operations Research techniques. Focus will be on understanding the use of these techniques in solving business problems.

### **Theory**

#### **UNIT I**

Linear Programming: Objective, Assumptions, Formulation of Linear Programming Problem, Graphic Method, Simplex method, Transportation and Assignment Problems.

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## **UNIT II**

Inventory control Models: Costs Involved in Inventory Management, Types of Inventory, Economic Order Quantity (EOQ) Model, Continuous Review (Q) System, Periodic Review (P) System, Hybrid System, Simulation.

## **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 and uncertainties, Decision problem, Maximax Criterion, Maximin Criterion, Minimax Regret Criterion, Laplace Criterion, Pay off Tables, Decision Trees, Expected Value of perfect Information.

## **UNIT V**

Game Theory - Two -Person Zero-Sum Game, Simulation, Network analysis – PERT & CPM.

### **Practical**

Linear programming: examples of Graphical method, simplex method and duality method; Practical on transportation model, Assignment model, Inventory control model; Calculation of EOQ and inventory control model, QR system, Pay off table; Examples of multiple channel model, decision problem; Sequencing and game theory; Simulation and PERT-CPM- examples

### **Suggested Readings**

Cook TM & Russell RA. 1989. *Introduction to Management Science*. Prentice Hall.

Taha HA. 2005. *Operations Research - An Introduction*. Prentice Hall.

Vohra ND. 2006. *Quantitative Techniques in Management*. McGraw Hill.

Wagner HM. 2005. *Principles of Operation Research*. Prentice Hall.

## **ELECTIVE COURSES**

### **ABM 516 RURAL MARKETING (2+0)**

#### **Objective**

To objective of this course is to develop understanding regarding issues in rural markets like marketing environment, consumer behaviour, distribution channels, marketing strategies, etc.

#### **Theory**

##### **UNIT I**

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

##### **UNIT II**

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

##### **UNIT III**

Rural consumer's behaviour - behavior of rural consumers and farmers; buyer characteristics and buying behaviour; Rural v/s urban markets, customer relationship management, rural market research.

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## UNIT IV

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

## UNIT V

Promotion and communication strategy - Media planning, planning of distribution channels, and organizing personal selling in rural market in India, innovation in rural marketing.

### **Suggested Readings**

Krishnamacharyulu C & Ramakrishan L. 2002. *Rural Marketing*. Pearson Edu.  
Ramaswamy VS & Nanakumari S. 2006. *Marketing Management*. 3rd Ed. MacMillan Publ.  
Singh AK & Pandey S. 2005. *Rural Marketing*. New Age.  
Singh Sukhpal. 2004. *Rural Marketing*. Vikas Publ. House.

## **ABM 517 AGRICULTURAL MARKETING MANAGEMENT (1+1)**

### **Objective**

The objective of this course is to give the students an understanding of concept, various policies, strategies and decisions relating to marketing that can be developed by agribusiness firms.

### **Theory**

#### **UNIT I**

Meaning and scope, agricultural marketing and economic development; Agricultural market structure – meaning, components and dynamics of market structure; marketing strategy – meaning & significance, formulation of marketing strategy; agribusiness marketing environment, design of marketing mix, market segmentation and targeting, determinants of consumer's behaviour.

#### **UNIT II**

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

#### **UNIT III**

Pricing policies and practice for agribusiness - determinants of price, objectives of pricing policies and pricing methods.

#### **UNIT IV**

Promotional management - advertising planning and execution; sales promotion; grading and standardization.

#### **UNIT V**

Distribution management - storage and warehousing and transportation management for agricultural products; marketing agencies/intermediaries – roles and functions; distribution channels involved in agribusiness.

### **Practical**

Agribusiness marketing environment, marketing mix of agro based industry, pricing policy of agro based products, advertising: cases and practices, visiting of various agro based industry, case study on agricultural marketing management and agro based products.

### **Suggested Readings**

Acharya SS & Agarwal NL. 2004. *Agricultural Marketing in India*. 4th Ed. Oxford & IBH.  
Kohls RL & Uhj JN. 2005. *Marketing of Agricultural Products*. 9th Ed. Prentice Hall.  
Kotler P. 2002. *Marketing Management – Analysis, Planning, Implementation and Control*. Pearson Edu.

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Krishnamacharyulu C & Ramakrishan L. 2002. *Rural Marketing*. Pearson Edu.  
Ramaswamy VS & Nanakumari S. 2002. *Marketing Management*. 2nd Ed. Mac Millan India.

## **ABM 518 FOOD TECHNOLOGY AND PROCESSING MANAGEMENT (1+1)**

### **Objective**

The objective of this course is to acquaint the students with different food processing techniques and their management.

### **Theory**

#### **UNIT I**

Present status of food industry in India; Organization in food industry; Introduction to operations of food industry; Deteriorative factors and hazards during processing, storage, handling and distribution.

#### **UNIT II**

Basic principles of food processing and food preservation by manipulation of parameters and factors and application of energy, radiations, chemicals and biotechnological agents; Packaging of foods.

#### **UNIT III**

Quality Management: TQCM (Total quality control management), control of raw materials, process and finished products, quality standards: BIS, PFA, HACCP, ISO etc., Food plant sanitation

#### **UNIT IV**

Analysis of costs in food organization; Risk management- Post Harvest process, losses and management for loss reduction, Management for value addition in food products, Laws and regulations related to food industry and food production and marketing; Quality management – quality standards, PFA, ISO, etc.

#### **UNIT V**

Case studies on project formulation in various types of food industries – milk and dairy products, cereal milling, oil-seed and pulse milling, sugarcane milling, honey production, baking, confectionery, oil and fat processing, fruits and vegetable storage and handling, processing of fruits and vegetables, egg, poultry, fish and meat handling and processing, etc.

### **Practical**

Operations of food industry; different method of food processing and food preservation Quality Management: TQCM (Total quality control management), Analysis of costs in food organization; Risk management- Post Harvest practices, Field visit and Case studies on project formulation in various types of food industries.

### **Suggested Readings**

Acharya SS & Aggarwal NL. 2004. *Agricultural Marketing in India*. Oxford & IBH.  
Early R. 1995. *Guide to Quality Management Systems for Food Industries*. Blackie.  
Jelen P. 1985. *Introduction to Food Processing*. Reston Publishing.  
Potly VH & Mulky MJ. 1993. *Food Processing*. Oxford & IBH.

## **ABM 519 FERTILIZER TECHNOLOGY AND MANAGEMENT (2+0)**

### **Objective**

The objective of this course is to acquaint the students in latest advances in fertilizer technology management.

### **Theory**

#### **UNIT I**

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Fertilizer development – concept, scope, need, resource availability; import and export avenues for fertilizer; types of fertilizers, grading and chemical constituents, role of fertilizers in agricultural production, production and consumption of fertilizer in India.

#### **UNIT II**

Calculation related to fertilizer required based on nutrient requirement, Economics of fertilizer use, Disparities in fertilizer use, optimization of fertilizer use, constraints to fertilizer use, Trends in fertilizer use – Time, region, crop climate, season, technology, policy – mediated trends in fertilizer use

#### **UNIT III**

Raw material needed and principles of manufacturing of nitrogenous, phosphatic and potassic fertilizers, secondary nutrient sources and micronutrient formulations.

#### **UNIT IV**

Production efficiency and capacity utilization; quality control and legal aspects- fertilizer control order.

#### **UNIT V**

Testing facilities; constraints in fertilizer use and emerging scenario of fertilizer use; assessment of demand and supply of different fertilizers, fertilizer distribution, fertilizer storage.

#### **UNIT VI**

Field trials and demonstration, fertilizer pricing policy, Subsidy; scope of biofertilizer; environmental pollution due to fertilizer use.

#### **UNIT VII**

WTO and agro-chemical industry

#### **Suggested Readings**

Brady NC & Weil RR. 2002. *The Nature and Properties of Soils*. 13th Ed. Pearson Edu.

*Fertilizer Control Order* (different years). Fertilizer Association of India, New Delhi.

*Fertilizer Statistics* (different years). Fertilizer Association of India, New Delhi

*Indian Journal of Fertilizers* (different years). Fertilizer Association of India, New Delhi.

San Chilli V. 1960. *Chemistry and Technology of Fertilizers*. American Chemical Soc. Monograph Series. Reinhold Publ. Corp.

Tisdale SL, Nelson WL, Beaton JD & Havlin JL. 2002. *Soil Fertility and Fertilizers*. 5th Ed. Prentice Hall.

### **ABM 520 MANAGEMENT OF AGRO CHEMICAL INDUSTRY (2+0)**

#### **Objective**

To familiarize the students with the agrochemicals, their structure, classification and development and also how to manage the agro-chemical industries.

#### **Theory**

##### **UNIT I**

Agro-chemicals: Definition and classification; Basic knowledge of agrochemicals; role and status of agro-chemical industry in India; Pesticides – Classification and Introduction, knowledge of different pesticides.

##### **UNIT II**

Insecticides – Definition and classification based on (a) Mode of Entry (b) Mode of Action and (c) Chemical Structure with example; Insecticidal formulation; preliminary knowledge of mode of action of insecticides; knowledge of plant protection equipments.

##### **UNIT III**

Fungicides – Classification and preliminary knowledge of commonly used fungicides; Biomagnifications of pesticides and pesticidal pollution.

##### **UNIT IV**

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Introductory knowledge about development of agro-chemicals; Insecticidal poisoning, symptoms and treatment; Main features of Insecticide Act.

#### **UNIT V**

Directorate of Plant Protection, Quarantine and Storage – A brief account of its organizational set up and functions; IPM Concept – Bio-pesticides – Plant products.

#### **UNIT VI**

WTO & agro-chemical industry

#### **Suggested Readings**

Dhaliwal GS, Singh R & Chhillar BS. 2006. *Essentials of Agricultural Entomology*. Kalyani.

Hayes WT & Laws ET. 1991. *Hand Book of Pesticides*. Academic Press.

Matsumura F. 1985. *Toxicology of Insecticides*. 2nd Ed. Plenum Publ.

Rajeev K & Mukherjee RC. 1996. *Role of Plant Quarantine in IPM*. Aditya Books.

### **ABM 521 FARM BUSINESS MANAGEMENT (1+1)**

#### **Objective**

To acquaint the students with the basic principles of farm management dealing with the analysis of farm resources having alternatives within the framework of resource restrictions.

#### **Theory**

##### **UNIT I**

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

##### **UNIT II**

Principles of farm management decisions – principle of variable proportion, cost principle, principle of factor substitution, law of equi-marginal returns, opportunity cost principle, etc.

##### **UNIT III**

Tools of farm management and farm business analysis - farm planning and budgeting; Farm records and accounts, types and problems in farm records and accounts, net worth statement, farm efficiency measures., Methods of valuation, Cost concepts & estimation of cost of cultivation / production.

##### **UNIT IV**

Management of farm resources – Land, Labour, Farm machinery, Farm building, etc.

##### **UNIT V**

Risk and uncertainty in farming -sources of uncertainty in farming, management strategy to counteract uncertainty and decision making process in farm business management under risks and uncertainty.

#### **Suggested Readings**

Heady EO & Jensen H. 1960. *Farm Management Economics*. Prentice Hall.

Johl SS & Kapoor TR. 1973. *Fundamentals of Farm Business Management*. Kalyani Publ.

Kahlon AS & Singh K. 1992. *Economics of Farm Management in India*. Allied Publ.

Panda SC. 2007. *Farm Management & Agricultural Marketing*. Kalyani Publ.

#### **Practical**

Concept of cost, three zones of cost function and profit maximization, law of equi-marginal returns, opportunity cost principle, farm business analysis, information needed for farm planning and budgeting, an illustration on complete budgeting, estimation of cost of cultivation/production, farm business analysis, management of farm resources.

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## **ABM 522 SEED PRODUCTION TECHNOLOGY AND MANAGEMENT (2+0)**

### **Objective**

To apprise students regarding principles and efficient management of seed production technology.

### **Theory**

#### **UNIT I**

Seed Technology – Role of Seed Technology, its Course Objective and goal, Seed Industry in India, National Seed Corporation – Tarai Seed Development Corporation, State Seed Corporations, National Seed Project and State Farms and their role.

#### **UNIT II**

Development and Management of Seed Programmes – Seed Village Concept, Basic Strategy of Seed Production and Planning and Organization of Seed Programme; Types of Seed Programme – Nucleus seed, Breeders seed, Foundation seed and Certified seed etc.

#### **UNIT III**

Maintenance of genetic purity – Minimum seed certification standard and Management of breeders & Nucleus seed; Management of seed testing laboratory and research and development.

#### **UNIT IV**

Management of seed processing plant, seed storage management; seed packaging and handling.

#### **UNIT V**

Seed Marketing; GM Crop seed, IPR, PBR, Patents and related issues and their impact on developing countries; Statutory intervention in the seed industry; Seed legislation and seed law enforcement, Seed act; Orientation and visit to seed production farms, seed processing Units, NSC, RSSC, RSSCA and seed testing laboratories.

#### **UNIT VI**

WTO and Seed Industry

### **Suggested Readings**

Agrawal RL. 1997. *Seed Technology*. Oxford & IBH.

Desai BB, Katecha PM & Salunkhe DK. 1997. *Seed Handbook: Biology, Production, Processing and Storage*. Marcel Dekker.

Kelly A. 1988. *Seed Production of Agricultural Crops*. Longman.

McDonald MB Jr. & Copeland LO. 1997. *Seed Production: Principles and Practices*. Chapman & Hall.

Thompson JR. 1979. *An Introduction to Seed Technology*. Leonard Hill.

## **ABM 523 TECHNOLOGY MANAGEMENT FOR LIVESTOCK PRODUCTS (2+0)**

### **Objective**

To impart knowledge about management of livestock products, product development, quality control, preservation and marketing strategies for livestock products.

### **Theory**

#### **UNIT I**

Present status of livestock products industry in India – dairy, meat poultry, skin, hides, wool, etc; Dairy Products- Manufacturing technologies of various dairy products and by-product utilization.

#### **UNIT II**

Meat and Poultry Products- Manufacturing technologies of meat and meat products, egg and poultry products; production processing and utilization of wool and animal by-products.



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### **UNIT III**

Plant Management- Production planning and control needs and techniques of production control, packaging, preservation and storage system for livestock products; transportation system for domestic markets and international markets. Value addition in dairy products

### **UNIT IV**

Quality control measures during storage and transit; extent of losses during storage and transport, management measures to minimize the loss.

### **UNIT V**

Marketing and distribution of animal products; quality standard for various products; environmental and legal issues involved, Local authority's regulations regarding transportation and shipment of animals meat.

### **UNIT VI**

WTO and meat, dairy Industry, WHO/international laws/requirements for human foods (dairy and meat),

### **Suggested Readings**

Forrest JC. 1975. *Principles of Meat Science*. Freeman Publ.

Gracey 1999. *Thorntons Meat Hygiene*. WB Saunders.

Mountney GJ. *Poultry Products Technology*. 2nd Ed. AVI Publ.

Ockerman & Hansen. 2002. *Animal Byproducts Processing and Utilization*. CRC Publ.

Pearson AM & Gillett TA. 1996. *Processed Meat*. 3rd Ed. Chapman & Hall.

Robertson GL. 1993. *Food Packaging Principles and Practices*. Marcel Dekker.

Stadelman W & Cotterill OJ. 2002. *Eggs Science and Technology*. 4th Ed. CBS.

Sukumar De 1980. *Outlines of Dairy Technology*. Oxford Univ. Press.

Walstra et al. 2006. *Dairy Science and Technology*. 2nd Ed. Taylor & Francis.

Yadav 1993. *Comprehensive Dairy Microbiology*. Metropolitan Publ.

## **ABM 524 FRUIT PRODUCTION AND POST HARVEST MANAGEMENT (2+0)**

### **Objective**

To impart knowledge regarding agro-techniques of fruit crops and their post-harvest management.

### **Theory**

#### **UNIT I**

World production and horticulture in India; present status of fruit industry in India and emerging scenario.

#### **UNIT II**

Management of horticultural crops – establishing an orchard, basic cultural practices, regulation of flowering, fruiting and thinning, protection against insect-pest, weeds: pre and post harvest management for quality and shelf life.

#### **UNIT III**

Post harvest management in horticulture- procurement management, important factors for marketing, standardization and quality control, packaging.

#### **UNIT IV**

Post harvest management in horticulture- development of fruit-based carbonated drinks, development of dehydrated products from some important fruits, storage of pulp in pouches, essential oils from fruit waste, dehydrated fruits. Market structure and export potential of fruits.

#### **UNIT V**

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Problems in marketing of fruits, and government policy; quality standards for domestic and international trade.

### **Suggested Readings**

Chadha KL & Pareek OP. 1993. *Advances in Horticulture*. Vols. I-IV. Malhotra Publ. House.

Kader AA. 1992. *Post-harvest Technology of Horticultural Crops*. Univ. of California. Div. of Agri. & Natural Resources.

## **ABM 525 FARM POWER & MACHINERY MANAGEMENT (1+1)**

### **Objective**

To acquaint the students with the farm mechanization status in the country and various techniques for farm machinery management and marketing.

### **Theory**

Various sources of farm power, their availability and utilization; Course Objective, importance, present status, level and the scope of farm mechanization.

### **UNIT II**

Tractor and power tillage industry – model, make, capacity, production. Present status of energy use, alternative energy use on farm and future requirement; concept of zero tillage.

### **UNIT III**

Farm machinery selection for different size farm and for different agro-climatic conditions and Cropping pattern; scheduling of farm operations higher efficiencies, indices of machine performance.

### **UNIT IV**

Cost analysis of operations for different implements on time and area basis, Economic performance of machines, optimization of tractor implements system and transport of farm produce.

### **UNIT V**

Agricultural equipments industry production, marketing and constraints; establishment of agricultural engineering enterprises (agro service centers, etc.).

### **UNIT VI**

WTO and Farm power & Machinery Industry

### **Practical**

Field visit of tractor and farm equipment industry – alternative energy use on farm and future requirement; concept of zero tillage. Selection of farm machinery for different agro-climatic conditions, scheduling of farm operations higher efficiencies, indices of machine performance. Cost analysis of operations for different implements on time and area basis, Economic performance of machines, optimization of tractor implements system.

### **Suggested Readings**

Carville LA. 1980. *Selecting Farm Machinery*. Louisiana Coop. Extn. Service Publ.

FAO 1984. *Agricultural Engineering in Development: Selection of Mechanization*. Agric. Service Bull.

Hunt D. 1977. *Farm Power and Machinery Management*. Iowa State Univ. Press.

Waters WK. 1980. *Farm Machinery Management Guide*. Pennsylvania Agric. Extn. Service Spl. Circular No. 1992.

## **ABM 526 INTERNATIONAL TRADE AND SUSTAINABILITY GOVERNANCE (2+0)**

### **Objective**

To impart knowledge to the students of international trade in agriculture and various provisions under WTO in the new trade regime.

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## **Theory**

### **UNIT I**

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

### **UNIT II**

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**

Importance of foreign trade for developing economy; absolute and comparative advantage, foreign trade of India. Role of organizations in foreign trade.

### **UNIT IV**

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

### **UNIT V**

Foreign demand, supply side analysis, opportunity cost, trade and factor prices, implications for developing countries, market entry methods, export - Import procedures and documentations.

## **Suggestive Readings**

Chadha GK. 2003. *WTO and Indian Economy*. Deep & Deep.

Vasisht AK & Singh Alka. 2003. *WTO and New International Trade Regime- Implication for Indian Agriculture*. Advance Publ. Concept.

## **ABM 527 MANAGEMENT OF AGRIBUSINESS COOPERATIVES (2+0)**

### **Objective**

To provide the students an understanding about the agribusiness cooperative organizations and their management.

## **Theory**

### **UNIT I**

Cooperative administration- a global perspective, ecology of cooperative administration, cooperative sector and economic development. Challenges before agri business cooperatives in the emerging global business environment.

### **UNIT II**

Cooperative management- nature, functions and purpose of cooperatives – procurement, storage, processing, marketing, process of cooperative formation, role of leadership in cooperative management.

### **UNIT III**

The state and cooperative movement, effects of cooperative law in management, long range planning for cooperative expansion, policy making.

### **UNIT IV**

Human resource management, placement and role of board of directors in cooperative management. Accountability of board of directors and professional managers (CEOs) in co-operatives

### **UNIT V**

Overview of agribusiness cooperative – credit cooperatives, cooperative marketing, dairy cooperative, horticultural cooperative; financing agribusiness cooperative.

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### **Suggested Readings**

Akmat JS. 1978. *New Dimensions of Cooperative Management*. Himalaya Publ. House.  
Ansari AA. 1990. *Cooperative Management Patterns*. Anmol Publ.  
Sah AK. 1984. *Professional Management for the Cooperatives*. Vikas Publ. House.

### **ABM 528 AGRIBUSINESS FINANCIAL MANAGEMENT (1+1)**

#### **Objective**

To impart trainings to the students regarding various aspects of financial management for agribusiness.

#### **Theory**

##### **UNIT I**

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

##### **UNIT II**

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

##### **UNIT IV**

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.

##### **UNIT V**

Agri-business financing system in India - functioning of cooperative credit institutions, commercial banks, regional rural banks, NABARD, Agro- Industries Corporation, etc in agribusiness financing.

#### **Practical**

Preparing the Cash flow statement; Leverage analysis; Calculating financial leverage, operating leverage; Preparation of an ideal capital structure for an Agri industry; Calculation of Working capital estimation in agribusiness; Role of cash, account receivables and Inventory in Agri business; Calculation of payback period, average rate of return, net present value, benefit cost ratio, Internal rate of return

### **Suggested Readings**

Chandra P. 2000. *Financial Management*. Tata McGraw Hill.  
Khan MY & Jain PK. 2004. *Management Accounting*. Tata McGraw Hill.  
Nelson AG & Murrey WG. 1988. *Agricultural Finance*. Kalyani Publ.  
Pandey IM. 1997. *Financial Management*. Vikas Publ. House.

### **ABM 529 FOOD RETAIL MANAGEMENT (2+0)**

#### **Objective**

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

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## **Theory**

### **UNIT I**

Introduction to International Food market, India's Competitive Position in World Food Trade, Foreign Investment in Global Food Industry, Retail management and Food Retailing, The Nature of Change in Retailing, Organized Retailing in India, E-tailing and Understanding food preference of Indian Consumer, Food consumption and Expenditure pattern, Demographic and Psychographic factors affecting Food Pattern of Indian Consumer.

### **UNIT II**

Value Chain in Food Retailing, Principal trends in food wholesaling and retailing, food wholesaling, food 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**

4 P's in Food Retail Management, Brand Management in Retailing, Merchandise pricing, Pricing Strategies used in conventional and nonconventional food retailing, Public distribution system, Promotion mix for food retailing, Management of sales promotion and Publicity, Advertisement Strategies for food retailers.

### **UNIT IV**

Managing Retail Operations, Managing Retailers' Finances, Merchandise buying and handling, Merchandise Pricing, Logistics, procurement of Food products and Handling Transportation of Food Products.

### **UNIT V**

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.

### **Suggested Readings**

Berman & Evans. 2008. *Retail Management: A Strategic Approach*. 10<sup>th</sup> Ed. Prentice Hall of India.  
Cox. 2006. *Retailing: An Introduction*. 5th Ed. Pearson Edu.  
Levy M & Weitz BW. 2004. *Retailing Management*. 5th Ed. McGraw Hill.

## **ABM 530 MANAGEMENT OF AGRICULTURAL INPUT MARKETING (1+1)**

### **Objective**

The objective of this course is to give the students an understanding of different marketing concept and marketing system in context of agricultural inputs.

## **Theory**

### **UNIT I**

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 cooperative, public and private sectors in agri- input marketing.

### **UNIT II**

Seed- Importance of seed input; Types of seeds- hybrid, high yielding and quality seeds; Demand and supply of seeds; Seed marketing channels, pricing, export-import of seeds; Role of NSC and State Seed Corporation.

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### **UNIT III**

Chemical Fertilizers- 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 IFFCO and KRIBCO in fertilizer marketing.

### **UNIT IV**

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- Production, supply, demand, Marketing and distribution channels of farm machines; Agro-industries Corporation and marketing of farm machines / implements/Equipments.

### **UNIT VI**

WTO and agricultural inputs.

### **Practical**

Management of distribution channels; Seed marketing channels; Marketing channels of fertilizers; Visit IFFCO and KRIBCO; Marketing channels of plant protection chemicals; Electricity/Diesel Oil – marketing and distribution system; Visiting of farm machinery and production unit; Visit of agro-industries corporation.

### **Suggested Readings**

Acharya SS & Agarwal NL. 2004. *Agricultural Marketing in India*. 4th Ed. Oxford & IBH.  
Broadway AC & Broadway Arif A. 2003. *A Text Book of Agri-Business Management*. Kalyani.  
Singh AK & Pandey S. 2005. *Rural Marketing*. New Age.  
Singh Sukhpal 2004. *Rural Marketing- Focus on Agricultural Inputs*. Vikas Publ. House.

## **ABM 531 FEED BUSINESS MANAGEMENT (2+0)**

### **Objective**

To acquaint the students with the role and importance of feed industry and the production of feed for livestock and poultry.

### **Theory**

#### **UNIT I**

Present status of feed resources; gap between demand and availability of nutrients; status of feed industry in India and world, constraints in the development of Indian feed industry.

#### **UNIT II**

Nutrients requirements of livestock and poultry; feed stuff and their origin; scientific storage of feeds and feed ingredients; protection of protein and fat, Pro-biotic in feeds

#### **UNIT III**

Processing of feeds, layout and design of feed plants, feed plant management; feed preparation for fish and pet animals, specialty feeds.

#### **UNIT IV**

Importance and preparation of mineral mixture; feed additives and supplements, feed mixing, principles of mixing and compounding of feeds; improving the feeding value of poor quality roughages. Significance of quality control.

#### **UNIT V**

Distribution channels, regulations relating to manufacture and sale of feed stuffs.

#### **UNIT VI**

WTO and Feed Industry

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### **Suggested Readings**

Gohl BO. 1981. *Tropical Feeds*. FAO.

McElhenny Robert R. 1994. *Feed Manufacturing Technology*. American Feed Industry Assoc.

Pfost Harry B. 1976. *Feed Manufacturing Technology*. American Feed Industry Assoc.

Rajgopalan K. *Feed Industry Red Book*. ZMAG Publication.

Rajgopalan K. 1989. *Storage Structures*. Oxford & IBH.

### **ABM 532 AGRI SUPPLY CHAIN MANAGEMENT (2+0)**

#### **Objective**

The course introduces students to the concepts and processes of agricultural supply chain management, framework for structuring supply chain drivers; network designs, demand forecasting, inventory planning, sourcing decisions and IT enablement of supply chain.

#### **Theory**

##### **UNIT I**

Supply Chain: Changing Business Environment; SCM: Present Need; Conceptual Model of Supply Chain Management; Evolution of SCM; SCM Approach; Traditional Agri. Supply Chain Management Approach; Modern Supply Chain Management Approach; Elements in SCM.

##### **UNIT II**

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 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**

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**

Concept of Information Technology: IT Application in SCM; Advanced Planning and Scheduling; SCM in Electronic Business; Role of Knowledge in SCM; Performance Measurement and Controls in Agri. Supply Chain Management- Benchmarking: introduction, concept and forms of Benchmarking.

### **Suggested Readings**

Altekar RV. 2006. *Supply Chain Management: Concepts and Cases*. Prentice Hall of India.

Monczka R, Trent R & Handfield R. 2002. *Purchasing and Supply Chain Management*. Thomson Asia.

van Weele AJ. 2000. *Purchasing and Supply Chain Management Analysis, Planning and Practice*. Vikas Publ. House.

### **ABM 533 MANAGEMENT OF VETERINARY HOSPITALS (2+0)**

#### **Objective**

The objective of this course is to acquaint the students about the designing, planning, organizing, and controlling the veterinary hospitals for optimizing the use of space, capital, skill and other resources.

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## **Theory**

### **UNIT I**

Needs, aims and objectives of Veterinary hospitals; the existing and simulated situations under which veterinary hospitals work or are to work.

### **UNIT II**

Designing and planning an ideal hospital; optimizing the use of resources - human, space, equipment, drugs, time, capital, etc.; Materials management and problems Normal purchase procedure. Receipt; storage and distribution of materials Cost reduction & scientific inventory control. Information system and materials management performance. Equipment maintenance, condemnation & disposal.

### **UNIT III**

Defining authority, responsibility and accountability of management for optimizing the use of skill, developing and upgrading skills and technology; efficient system of record keeping and accounting; Concept of quality & Total quality management (T.Q.M) Introduction to Veterinary audit, Statistical quality control (S.Q.C.), Quality control Circle (Q.C.C.).

### **UNIT IV**

Hospital information system as an aid to efficient controlling and monitoring; need for financial resources - investment and working capital; Records: Types & Methodology, Reports and Reporting system. Contemporary and need-based methods of accounting; General consideration. Need based information system. Applicability in surveillance & monitoring; planning & policy making; cost control.

### **UNIT V**

Economic functions and quality control system; Animal health Economics: An introduction Need for financial resources (type and need). Investment planning and working capital; Budgeting and cost cutting (cost control).legal aspects in the functioning of the hospital.

## **ABM 534 POULTRY AND HATCHERY MANAGEMENT (2+0)**

### **Objective**

The course provides an insight into the importance of management in poultry industry, managing a poultry and hatchery enterprise, planning production of poultry products, financial, personnel and marketing management.

## **Theory**

### **UNIT I**

Poultry and hatchery industry; role of management in poultry industry.

### **UNIT II**

Planning and establishing a poultry and hatchery unit- location, size and construction; farm and hatchery equipments and physical facilities; organizing and managing a poultry farm and hatchery.

### **UNIT III**

Incubation and hatching; production of quality chicks and eggs; factors affecting hatchability; bio-security and hatchery sanitation; handling of hatching eggs; maintaining chick quality-chick grading, sexing, packing, dispatch , transportation and chick delivery.

### **UNIT IV**

Franchise hatcheries; custom hatching; brooding; growing and laying management; crisis management; industrial breeding, feeding, housing and disease management; waste management; Record management; cost accounting and budgetary control.

### **UNIT V**

Risks and insurance; personal management- labour relations including wages and salaries, job evaluation and employee appraisal; marketing management-direct sale and sale through franchisees/ agents, advertisement, sale and after sale services, other innovative sales strategies.



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## UNIT VI

WTO and poultry industry.

## ABM 535 MANAGEMENT OF FLORICULTURE AND LANDSCAPING (2+0)

### Objective

To objective of this course is to expose the students with floriculture technology and its Agri business implications including international trade.

### Theory

#### UNIT I

Introduction, importance and scope of floriculture industry; Recent advances in floriculture industry.

#### UNIT II

Evolution of new cultivars; and production technology of ornamental plants; special techniques for forcing of flowers for export. Bonsai art and miniature plant culture.

#### UNIT III

Drying and dehydration of flowers; response of flowers to environmental conditions; importance and scope of landscape gardening. Lawn establishment, maintenance and management.

#### UNIT IV

Style of gardening, Anesthetic and Socio-aesthetic planning of old and newly developed towns and cities; commercial cultivation of flower crops (rose, jasmine gladiolus, tuberose, marigold, aster, carnation, gerbera, liliun chrysanthemum); use of plant regulators in flower production.

#### UNIT V

Extraction, purification and storage of essential oils and perfumes; Scope, marketing and constraints of cut flower industry; post harvest changes in cut flowers, storage and packing of cut flowers; determining optimum time of harvesting of flowers for export and home use.

### Suggested Readings

Chadha KL & Choudhary B. *Ornamental Horticulture in India*. ICAR.

Grindal EW. *Every Day Gardening in India*. D.B. Tarporevala Sons.

Randhawa GS & Mukhopadhyay A. *Floriculture in India*. Allied Publ.

Randhawa MS. *Beautifying India*. Raj Kamal Publ.

## ABM 536 QUALITY MANAGEMENT (2+0)

### Theory

#### UNIT I

Defining, planning, controlling, assuring and delivering quality. Introduction of quality in business, responsibility for employees, quality for the customers, Deming's 14 point for quality management.

#### UNIT II

Quality grades and standards, quality circles. Concept of TQM, basic approach of TQM, strategic framework for implementing TQM.

#### UNIT III

Statistical methods for quality control, seven QC tools: flow chart, check sheet, histogram, Pareto diagram, cause & effect diagram, scatter diagram, control chart (zone control chart & process capability index), concept of six sigma.

#### UNIT IV

Barriers & challenges in quality management. Quality improvement programme, factors affecting quality and productivity. Global quality in 21<sup>st</sup> century.

### Suggested Reading:

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Quality management-Demystified

Total Quality Management – Mohanty & Lakhe, Jaico Publishing House

Quality Control- Dale H. Besterfield, Pearson education

Quality Management- Kanishka Bedi; Oxford University Press India, 2006

### **ABM 537 COMMODITY FUTURE MARKETS AND DERIVATIVES (2+0)**

#### **Objective**

Commodity futures markets are an important instrument of risk management in agricultural markets. This course aims at making the participants familiar with the logic, practice and instruments of the commodity futures and derivatives. These markets are increasingly becoming functional now under the liberalised market and policy environment. The course will examine the nature of these markets, major instruments and tools of their performance assessment and global trends

#### **Theory**

##### **UNIT I**

Commodities, Derivatives, Futures and Options

##### **UNIT II**

Why futures, Pricing of Commodities, Evaluation of International Commodity Exchanges, Commodity Futures in India and its Regulations, Dynamics of a commodity exchange

##### **UNIT III**

Market Participants & Trading Strategies, Fundamental Analysis, Technical Analysis, Analyzing Commodity Price Chart Patterns, Confirming Tools

##### **UNIT IV**

Useful Trading Techniques, Clearing & Settlement, Delivery Mechanism, Taxation Issues,

## **COMPULSORY NON-CREDIT COURSES**

### **PGS 501 LIBRARY AND INFORMATION SERVICES (0+1)**

#### **Objective**

To equip the library users with skills to trace information from libraries efficiently, to apprise them of information and knowledge resources, to carry out literature survey, to formulate information search strategies, and to use modern tools (Internet, OPAC, search engines etc.) of information search.

#### **Practical**

Introduction to library and its services; Role of libraries in education, research and technology transfer; Classification systems and organization of library; Sources of information- Primary Sources, Secondary Sources and Tertiary Sources; Intricacies of abstracting and indexing services (Science Citation Index, Biological Abstracts, Chemical Abstracts, CABI Abstracts, etc.); Tracing information from reference sources; Literature survey; Citation techniques/Preparation of bibliography; Use of CD-ROM Databases, Online Public Access Catalogue and other computerized library services; Use of Internet including search engines and its resources; e- resources access methods.

### **PGS 502 TECHNICAL WRITING AND COMMUNICATIONS SKILLS (0+1)**

#### **Objective**

To equip the students/scholars with skills to write dissertations, research papers, etc.

To equip the students/scholars with skills to communicate and articulate in English (verbal as well as writing).

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## **Practical**

Technical Writing - Various forms of scientific writings- theses, technical papers, reviews, manuals, etc; Various parts of thesis and research communications (title page, authorship contents page, preface, introduction, review of literature, material and methods, experimental results and discussion); Writing of abstracts, summaries, précis, citations etc.; commonly used abbreviations in the theses and research communications; illustrations, photographs and drawings with suitable captions; pagination, numbering of tables and illustrations; Writing of numbers and dates in scientific write-ups; Editing and proof-reading; Writing of a review article. Communication Skills - Grammar (Tenses, parts of speech, clauses, punctuation marks); Error analysis (Common errors); Concord; Collocation; Phonetic symbols and transcription; Accentual pattern: Weak forms in connected speech: Participation in group discussion: Facing an interview; presentation of scientific papers.

## **Suggested Readings**

Chicago Manual of Style. 14th Ed. 1996. Prentice Hall of India.

Collins' Cobuild English Dictionary. 1995. Harper Collins.

Gordon HM & Walter JA. 1970. Technical Writing. 3rd Ed. Holt, Rinehart & Winston.

Hornby AS. 2000. Comp. Oxford Advanced Learner's Dictionary of Current English. 6th Ed. Oxford University Press.

James HS. 1994. Handbook for Technical Writing. NTC Business Books. Joseph G. 2000. MLA Handbook for Writers of Research Papers. 5th Ed. Affiliated East-West Press.

Mohan K. 2005. Speaking English Effectively. MacMillan India. Richard WS. 1969. Technical Writing. Barnes & Noble.

Robert C. (Ed.). 2005. Spoken English: Flourish Your Language. Abhishek.

Sethi J & Dhamija PV. 2004. Course in Phonetics and Spoken English. 2nd Ed. Prentice Hall of India.

Wren PC & Martin H. 2006. High School English Grammar and

## **PGS 503 INTELLECTUAL PROPERTY AND ITS MANAGEMENT IN AGRICULTURE (1+0) (e-Course)**

### **Objective**

The main objective of this course is to equip students and stakeholders with knowledge of intellectual property rights (IPR) related protection systems, their significance and use of IPR as a tool for wealth and value creation in a knowledge-based economy.

### **Theory**

Historical perspectives and need for the introduction of Intellectual Property Right regime; TRIPS and various provisions in TRIPS Agreement; Intellectual Property and Intellectual Property Rights (IPR), benefits of securing IPRs; Indian Legislations for the protection of various types of Intellectual Properties; Fundamentals of patents, copyrights, geographical indications, designs and layout, trade secrets and traditional knowledge, trademarks, protection of plant varieties and farmers' rights and bio-diversity protection; Protectable subject matters, protection in biotechnology, protection of other biological materials, ownership and period of protection; National Biodiversity protection initiatives; Convention on Biological Diversity; International Treaty on Plant Genetic Resources for Food and Agriculture; Licensing of technologies, Material transfer agreements, Research collaboration Agreement, License Agreement.

### **Suggested Readings**

Erbisch FH & Maredia K.1998. Intellectual Property Rights in Agricultural Biotechnology. CABI.

Ganguli P. 2001. Intellectual Property Rights: Unleashing Knowledge Economy. McGraw-Hill.

Intellectual Property Rights: Key to New Wealth Generation. 2001. NRDC & Aesthetic Technologies.

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Ministry of Agriculture, Government of India. 2004. State of Indian Farmer. Vol. V. Technology Generation and IPR Issues. Academic Foundation.

Rothschild M & Scott N. (Ed.). 2003. Intellectual Property Rights in Animal Breeding and Genetics. CABI.

Saha R. (Ed.). 2006. Intellectual Property Rights in NAM and Other Developing Countries: A Compendium on Law and Policies. Daya Publ. House.

The Indian Acts - Patents Act, 1970 and amendments; Design Act, 2000; Trademarks Act, 1999; The Copyright Act, 1957 and amendments; Layout Design Act, 2000; PPV and FR Act 2001, and Rules 2003; National Biological Diversity Act, 2003.

## **PGS 504 AGRICULTURAL RESEARCH, RESEARCH ETHICS AND RURAL DEVELOPMENT PROGRAMME (1+0) (e-Course)**

### **Objective**

To enlighten the students about the organization and functioning of agricultural research systems at national and international levels, research ethics, and rural development programmes and policies of Government.

### **Theory**

#### **UNIT I**

History of agriculture in brief; Global agricultural research system: need, scope, opportunities; Role in promoting food security, reducing poverty and protecting the environment; National Agricultural Research Systems (NARS) and Regional Agricultural Research Institutions; Consultative Group on International Agricultural Research (CGIAR): International Agricultural Research Centres (IARC), partnership with NARS, role as a partner in the global agricultural research system, strengthening capacities at national and regional levels; International fellowships for scientific mobility.

#### **UNIT II**

Research ethics: research integrity, research safety in laboratories, welfare of animals used in research, computer ethics, standards and problems in research ethics.

#### **UNIT III**

Concept and connotations of rural development, rural development policies and strategies. Rural development programmes: Community Development Programme, Intensive Agricultural District Programme, Special group – Area Specific Programme, Integrated Rural Development Programme (IRDP) Panchayati Raj Institutions, Co-operatives, Voluntary Agencies/Non-Governmental Organisations. Critical evaluation of rural development policies and programmes. Constraints in implementation of rural policies and programmes.

#### **Suggested Readings**

Bhalla GS & Singh G. 2001. Indian Agriculture - Four Decades of Development. Sage Publ.

Punia MS. Manual on International Research and Research Ethics. CCS, Haryana Agricultural University, Hisar.

Rao BSV. 2007. Rural Development Strategies and Role of Institutions - Issues, Innovations and Initiatives. Mittal Publ.

Singh K.. 1998. Rural Development - Principles, Policies and Management. Sage Publ.

## **PGS 505 DISASTER MANAGEMENT 1+0 (e-Course)**

### **Objectives**

To introduce learners to the key concepts and practices of natural disaster management; to equip them to conduct thorough assessment of hazards, and risks vulnerability; and capacity building.

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## **Theory**

### **UNIT I**

Natural Disasters- Meaning and nature of natural disasters, their types and effects. Floods, Drought, Cyclone, Earthquakes, Landslides, Avalanches, Volcanic eruptions, Heat and cold Waves, Climatic Change: Global warming, Sea Level rise, Ozone Depletion

### **UNIT II**

Man Made Disasters- Nuclear disasters, chemical disasters, biological disasters, building fire, coal fire, forest fire. Oil fire, air pollution, water pollution, deforestation, Industrial wastewater pollution, road accidents, rail accidents, air accidents, sea accidents.

### **UNIT III**

Disaster Management- Efforts to mitigate natural disasters at national and global levels. International Strategy for Disaster reduction. Concept of disaster management, national disaster management framework; financial arrangements; role of NGOs, Community-based organizations, and media. Central, State, District and local Administration; Armed forces in Disaster response; Disaster response: Police and other organizations.

### **Suggested Readings**

Gupta HK. 2003. Disaster Management. Indian National Science Academy. Orient Blackswan.  
Hodgkinson PE & Stewart M. 1991. Coping with Catastrophe: A Handbook of Disaster Management. Routledge.  
Sharma VK. 2001. Disaster Management. National Centre for Disaster Management, India.

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## **LIST OF JOURNALS**

- ❖ Agribusiness – An International Journal
- ❖ Decision
- ❖ Harvard Business Review
- ❖ Indian Cooperative Review
- ❖ Indian Journal of Agricultural Economics
- ❖ Indian Journal of Agricultural Marketing
- ❖ Indian Journal of Finance
- ❖ Indian Journal of Marketing
- ❖ Indian Management
- ❖ Indian Management Studies Journal
- ❖ Journal of Agri-business
- ❖ Journal of Marketing Management
- ❖ Journal of Marketing Research
- ❖ Journal of Sales Management
- ❖ Management Review
- ❖ Prabandhan
- ❖ Vikalpa

## **E- RESOURCES**

- ❖ [www.pearsoned.com](http://www.pearsoned.com) (Pearson Education Publication)
- ❖ [www.mcgraw-hill.com](http://www.mcgraw-hill.com) (McGraw-Hill Publishing Company)
- ❖ [www.aima-ind.org](http://www.aima-ind.org) (All India Management Association)
- ❖ [www.oup.com](http://www.oup.com) (Oxford University Press)
- ❖ [www.emeraldinsight.com](http://www.emeraldinsight.com) (Emerald Group Publishing)
- ❖ [www.sagepub.com](http://www.sagepub.com) (Sage publications)
- ❖ [www.harvardbusiness.com](http://www.harvardbusiness.com) (Harvard Business Review)
- ❖ [www.marketingpower.com](http://www.marketingpower.com) (American Marketing Association)
- ❖ [www.isaeindia.org](http://www.isaeindia.org) (Indian Society of Agricultural Economics)
- ❖ [www.macmillanindia.com](http://www.macmillanindia.com) (Macmillan Publishing)
- ❖ [www.sfacindia.com](http://www.sfacindia.com) (Small Farmers' Agri-Business Consortium)
- ❖ [www.isapindia.org](http://www.isapindia.org) (Indian Society of Agribusiness Professionals)
- ❖ [www.icar.org.in](http://www.icar.org.in) (Indian Council of Agricultural Research)
- ❖ [www.nseindia.com](http://www.nseindia.com) (National Stock Exchange of India Ltd)
- ❖ [www.nseindia.com](http://www.nseindia.com) (Bombay Stock Exchange)
- ❖ [www.ncdex.com](http://www.ncdex.com) (National Commodity & Derivatives Exchange Limited)
- ❖ [www.phdcci.in](http://www.phdcci.in) (PHD Chamber of Commerce and Industry)
- ❖ [www.ficci.com](http://www.ficci.com) (Federation of Indian Chambers of Commerce and Industry)
- ❖ [www.assochem.org](http://www.assochem.org) (Associated Chambers of Commerce and Industry of India)
- ❖ [www.apeda.com](http://www.apeda.com) (Agricultural and Processed Food Products Export Development Authority)
- ❖ [www.mpeda.com](http://www.mpeda.com) (Marine Products Export Development Authority)