



# **SEMESTERWISE COURSE LAYOUT FOR**

**M.B.A. (Agri.)  
(Master of Business Management-Agriculture)**

**Recommended by NCG  
New ICAR Syllabi Pattern**

**2009-10**

## **ORGANIZATION OF COURSE CONTENTS & CREDIT REQUIREMENTS (as per New ICAR syllabi pattern)**

### **Code Numbers**

- All courses are divided into two series: 500-series courses pertain to Master's level, and 600-series to Doctoral level. A Ph. D. student must take a minimum of two 600 series courses, but may also take 500-series courses if not studied during Master's programme.
- Credit seminar for Master's level is designated by code no. 591, and the two seminars for Doctoral level are coded as 691 and 692, respectively.
- Similarly, 599 and 699 codes have been given for Master's research and Doctoral research, respectively.

### **Course Contents**

The contents of each course have been organized into:

- Objective – to elucidate the basic purpose.
- Theory units – to facilitate uniform coverage of syllabus for paper setting.
- Suggested Readings – to recommend some standard books as reference material. This does not unequivocally exclude other such reference material that may be recommended according to the advancements and local requirements.
- A list of journals pertaining to the discipline is provided at the end which may be useful as study material for 600-series courses as well as research topics.
- E-Resources - for quick update on specific topics/events pertaining to the subject.
- Broad research topics provided at the end would facilitate the advisors for appropriate research directions to the PG students.

### **Minimum Credit Requirements**

#### **Agricultural Economics and Agricultural Extension**

<b>Subject</b>	<b>Master's programme</b>	<b>Doctoral programme</b>
Major	20	15
Minor	09	08
Supporting	05	05
Seminar	01	02
Research	20	45
<b>Total Credits</b>	<b>55</b>	<b>75</b>
Compulsory Non Credit Courses	See relevant section	

**Major subject:** The subject (department ) in which the students takes admission

**Minor subject:** The subject closely related to students major subject (e.g., if the major subject is Entomology, the appropriate minor subjects should be Plant Pathology & Nematology).

**Supporting subject:** The subject not related to the major subject. It could be any subject considered relevant for student's research work.

**Non-Credit Compulsory Courses:** Please see the relevant section for details. Six courses (PGS 501-PGS 506) are of general nature and are compulsory for Master's programme. Ph. D. students may be exempted from these courses if already studied during Master's degree.

**Agri-Business Management (MBA)\***

Core Courses	28
Seminar	01
Basic Supporting Courses	06
Project	10
Elective Courses	10-20

Compulsory Non-credit courses (Please see the relevant section)

***\* Agri-Business curriculum may be linked with AICTE in respect of academic calendar, minimum courses, credit hour requirements and other regulations***

**AGRI-BUSINESS MANAGEMENT**  
**Course Structure – at a Glance (as per New ICAR syllabi pattern)**  
**MBA (Agri-Business)**

CODE	COURSE TITLE	CREDITS
<b>Core Courses + Seminar Total: 28+1</b>		
ABM 501	Principles of management and organizational behaviour	3
ABM 502	Agribusiness environment & policy	2
ABM 503	Managerial economics	3
ABM 504	Managerial accounting and control	2
ABM 505	Communication for management & business	2
ABM 506	Business laws and ethics	2
ABM 507	Marketing management	3
ABM 508	Human resource management	2
ABM 509	Financial management	2
ABM 510	Production and operations management	2
ABM 511	Research methodology in business management	3
ABM 512	Project management and entrepreneurship development	2
ABM 591	Master's seminar	1
ABM 595	Summer training/ industrial attachment *	S/US
<b>Basic Supporting (Compulsory)</b>		
ABM 513	Computers for managers	2
ABM 514	Management information system	2
ABM 515	Operations research	2
<b>Project</b>		
ABM 599	Project *	10
<b>Elective Courses***</b>		<b>Total - Minimum 10, Maximum 20</b>
ABM 516	Rural marketing	2
ABM 517	Agricultural marketing management	2
ABM 518	Food technology & processing management	2
ABM 519	Fertilizer technology & management <sup>@</sup>	2
ABM 520	Management of agro-chemical industry <sup>@</sup>	2
ABM 521	Farm business management	2
ABM 522	Seed production technology and management	2

ABM 523	Technology management for livestock products	2
ABM 524	Fruit production & post harvest management	2
ABM 525	Farm power & machinery management	2
ABM 526	International trade & sustainability governance	2
ABM 527	Management of agribusiness co-operatives	2
ABM 528	Agribusiness financial management	2
ABM 529	Food retail management	2
ABM 530	Management of agricultural input marketing	2
ABM 531	Feed business management	2
ABM 532	Agri-supply chain management	2
ABM 533	Management of veterinary hospitals	2
ABM 534	Poultry and hatchery management	2
ABM 535	Management of floriculture and landscaping	2

\* 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.

## Agri-Business Management (MBA)

Sr. No.	Subject	Credit suggested by NCG, ICAR,New Delhi	Proposed Credit
1	Core Courses	28	28
2	Seminar	01	01
3	Basic Supporting Courses	06	06
4	Project	10	10
5	Elective Courses	10-20	10-20*
	<b>Total Credits</b>	<b>55-65</b>	<b>55-65</b>
	Compulsory Non-credit courses (NCC)	06	06

\* Total 40 credits are offered for elective courses to the students in 2<sup>nd</sup> year of the master's programme, subject to minimum 10 credits and maximum of 20 credits.

### ABSTRACT

#### SEMESTERWISE LAYOUT PROPOSED FOR MBA(Agri.)

Sr. No.	Subject	SEMESTERS				Total
		I	II	III	IV	
1	Core Courses	13	5	10	-	28
2	Seminar	-	-	1	-	01
3	Basic Supporting Courses	2	2	2	-	06
4	Project	-	10	-	-	10
5	Elective Courses	-	-	-	10	10
	<b>Total Credits</b>	<b>15</b>	<b>17</b>	<b>13</b>	<b>10</b>	<b>55</b>
	Compulsory Non-credit courses (NCC)	2	-	2	2	06

## PROPOSED SEMESTERWISE LAYOUT FOR MBA (AGRI.) PROGRAMME

COURSE CODE	COURSE TITLE	CREDITS
<b>Semester-I</b>		
<b>A. Core courses</b>		
ABM 501	PRINCIPLES OF MANAGEMENT AND ORGANIZATIONAL BEHAVIOUR	3=2+1
ABM 503	MANAGERIAL ECONOMICS	3=3+0
ABM 504	MANAGERIAL ACCOUNTING AND CONTROL	2=1+1
ABM 505	COMMUNICATION FOR MANAGEMENT & BUSINESS	2=1+1
ABM 507	MARKETING MANAGEMENT	3=2+1
	Sub Total	13=9+4
<b>B. Supporting courses</b>		
ABM 513	COMPUTERS FOR MANAGERS	2=1+1
	Sub Total	2=1+1
<b>C. Non Credit compulsory courses (NCCC) # #</b>		
PGS 501	LIBRARY AND INFORMATION SERVICES	1=0+1
PGS 504	BASIC CONCEPTS IN LABORATORY TECHNIQUES	1=0+1
	Sub Total	2=0+2
	<b>Total (A + B + C)</b>	<b>17=10+7</b>
<b>Semester-II</b>		
<b>A. Core courses</b>		
ABM 511	RESEARCH METHODOLOGY IN BUSINESS MANAGEMENT	3=2+1
ABM 512	PROJECT MANAGEMENT AND ENTREPRENEURSHIP DEVELOPMENT	2=1+1
ABM 595	SUMMER TRAINING/ INDUSTRIAL ATTACHMENT *	S/US
	Sub Total	5=3+2
<b>B. Supporting courses</b>		
ABM 515	OPERATIONS RESEARCH	2=1+1
	Sub Total	2=1+1
<b>C. Project</b>		
ABM 599	PROJECT *	10=0+10
	Sub Total	10=0+10
	<b>Total (A + B + C)</b>	<b>17=4+13</b>

*Contd.*

Semester-III		
<b>A. Core courses</b>		
ABM 502	AGRIBUSINESS ENVIRONMENT & POLICY	2=2+0
ABM 506	BUSINESS LAWS AND ETHICS	2=2+0
ABM 508	HUMAN RESOURCE MANAGEMENT	2=1+1
ABM 509	FINANCIAL MANAGEMENT	2=1+1
ABM 510	PRODUCTION AND OPERATIONS MANAGEMENT	2=1+1
ABM 591	MASTER'S SEMINAR	1=0+1
	<b>Sub Total</b>	<b>11=7+4</b>
<b>B. Supporting courses</b>		
ABM 514	MANAGEMENT INFORMATION SYSTEM	2=2+0
	<b>Sub Total</b>	<b>2=2+0</b>
<b>C. Non credit compulsory courses (NCCC)# #</b>		
PGS 505	AGRICULTURAL RESEARCH ETHICS AND RURAL DEVELOPMENT PROGRAMMES	1=1+0
PGS 506	DISASTER MANAGEMENT	1=1+0
	<b>Sub Total</b>	<b>2=2+0</b>
	<b>Total (A + B + C)</b>	<b>15=11+4</b>
Semester-IV		
<b>A. Elective courses**</b>		
<i>Elective courses (Minimum 10 or Maximum 20 credits to be completed from one or two specialised elective areas)</i>		
<b>I</b>	<b>PRODUCTION MANAGEMENT</b>	
ABM 519	FERTILIZER TECHNOLOGY & MANAGEMENT @	2=2+0
ABM 520	MANAGEMENT OF AGRO-CHEMICAL INDUSTRY @	2=2+0
ABM 522	SEED PRODUCTION TECHNOLOGY AND MANAGEMENT	2=1+1
ABM 525	FARM POWER & MACHINERY MANAGEMENT	2=1+1
ABM 534	POULTRY AND HATCHERY MANAGEMENT	2=1+1
ABM 535	MANAGEMENT OF FLORICULTURE AND LANDSCAPING	2=1+1
	<b>Sub Total</b>	<b>12=8+4</b>
<b>II</b>	<b>PROCESSING MANAGEMENT</b>	
ABM 518	FOOD TECHNOLOGY & PROCESSING MANAGEMENT	2=1+1
ABM 523	TECHNOLOGY MANAGEMENT FOR LIVESTOCK PRODUCTS	2=1+1
ABM 524	FRUIT PRODUCTION & POST HARVEST MANAGEMENT	2=1+1
ABM 531	FEED BUSINESS MANAGEMENT	2=1+1
	<b>Sub Total</b>	<b>8=4+4</b>

*Contd.*



<b>III</b>	<b>MARKETING MANAGEMENT</b>	
ABM 516	RURAL MARKETING	2= 1+1
ABM 517	AGRICULTURAL MARKETING MANAGEMENT	2=1+1
ABM 529	FOOD RETAIL MANAGEMENT	2=1+1
ABM 530	MANAGEMENT OF AGRICULTURAL INPUT MARKETING	2=1+1
ABM 532	AGRI-SUPPLY CHAIN MANAGEMENT	2=1+1
	<b>Sub Total</b>	<b>10=5+5</b>
<b>IV</b>	<b>FINANCIAL MANAGEMENT</b>	
ABM 526	INTERNATIONAL TRADE & SUSTAINABILITY GOVERNANCE	2=2+0
ABM 528	AGRIBUSINESS FINANCIAL MANAGEMENT	2=1+1
	<b>Sub Total</b>	<b>4=3+1</b>
<b>V</b>	<b>HUMAN RESOURCE MANAGEMENT</b>	
ABM 521	FARM BUSINESS MANAGEMENT	2=1+1
ABM 527	MANAGEMENT OF AGRIBUSINESS CO-OPERATIVES	2=1+1
ABM 533	MANAGEMENT OF VETERINARY HOSPITALS	2=1+1
	<b>Sub Total</b>	<b>6=3+3</b>
	<b>Elective courses Total (A)</b>	<b>40=23+17</b>
	<b>10 credits of elective courses to be completed from above 40 credits i. e. Semester IV</b>	<b>10=5+5</b>
<b>B. Non credit compulsory courses (NCCC) # #</b>		
PGS 502	TECHNICAL WRITING AND COMMUNICATION SKILLS	1=0+1
PGS 503	INTELLECTUAL PROPERTY AND ITS MANAGEMENT IN AGRICULTURE	1=1+0
	<b>Sub Total (B)</b>	<b>2=1+1</b>
	<b>Total of IV<sup>th</sup> semester</b>	<b>12=6+6</b>
	<b>Total of I, II and III semesters</b>	<b>49=25+24</b>
	<b>GRAND TOTAL (I + II + III + IV)</b>	<b>61=31+30</b>

\* To be completed after the end of II<sup>nd</sup> semester but before commencement of III<sup>rd</sup> semester.

\*\* Elective courses will be offered to the students in 2<sup>nd</sup> year of the programme, subject to minimum 10 credits and maximum of 20 credits.

# # Compulsory Non Credit Courses (NCCC) to be completed, as and when offered by the concerned Department or Course Teacher. The students have to complete these courses (6 credits) during respective semester for fulfillment of the MBA (Agri.) degree.

@ Visits to be arranged to important manufacturing units to upgrade the practical knowledge.

@@ Placement of the students to be arranged before the end of IV<sup>th</sup> semester.

## LESSON PLANS FOR AGRI-BUSINESS MANAGEMENT- MBA (AGRI.) PROGRAMME

**ABM 501                      PRINCIPLES OF MANAGEMENT AND ORGANIZATIONAL  
BEHAVIOUR**

**CREDIT: 3= 2+1**

### THEORY

No. of lecture(s)	Topics	Weightage
1	Nature, scope and significance of management	3
1	Evolution of management thought	3
1	Approaches to management	3
1	Functions of a manager	3
1	Planning- types, steps	4
1	Course objective, process, strategies, policies	4
1	MBO, strategic planning process	4
1	SWOT analysis	4
2	Organizing-structure and process, line staff, authority and responsibility	4
1	General principles of management, functional areas of management	3
1	Directing-training, communication and motivation	3
2	Controlling- significance, process, techniques, standards and benchmarks, management audit	5
1	Nature, scope and significance of organizational behaviour	4
2	Evolution and historical background of organizational behaviour	4
2	Models of organizational behaviour	4
1	Foundations of individual behaviour	4
1	Diversity	4
1	Micro organizational behavior- personality, self-concept, self-esteem and self-efficacy	4
1	Attitudes, perception, power- types and structures	4
1	Motivation- types of motivation. Theories of motivation, applications of motivation	4
1	Transactional analysis- Johari Window-self fulfilling prophecy	4
1	Interpersonal relations - understanding, determinants and developing.	3
1	Leadership styles and influence process, leadership theories, types of leaders, and effective leader	3
1	Group dynamics- types of groups, group formation, group decision making, team building	3
1	Organizational culture or climate - concept, dimensions, ethos, determinants.	3
1	Organizational conflicts- concepts, sources, implications and management	3
1	Organizational changes- types, resistances to change, role of change agents	3
1	Telnet management training and development, wages system- legal issues, implications and management	3
<b>32</b>	<b>Total</b>	<b>100</b>

## PRACTICAL

To acquaint the students with preparation of project proposal on organizational behaviour and management

No. of practical (s)	Name of the practical	Weightage
2	A study of functions of different types of managers.	8
3	SWOT analysis of selected organization.	9
3	Studies on staffing, trainings and controlling of selected organization.	8
3	A critical analysis of selected organizational models.	9
3	A studies on micro- organizational behaviour aspects like personality, self- concept etc.	8
2	Examination of organization culture and changes of selected units.	8
<b>16</b>	<b>Total</b>	<b>50</b>

### SUGGESTED READINGS

1. Fred Luthans. 1998. Organizational Behavior. Tata McGraw Hill.
2. Harold Koontz and Keing Weighhrich. Essentials of Management. McGraw Hill.
3. John, W. Newstrom and Keith Davis. 1997. Human Behavior at Work. Tata McGraw.
4. Robert, C. Appleby. 1997. Modern Business Administration. MacMillan India.
5. Stephen, P. Robbins. 2007. Organizational Behaviour. Prentice Hall.
6. Stoner James, A. F. 2005. Management. Pearson Edu.
7. Shejwalkar, P.C. 1995. Principles and Practices of Management.
8. Ghanekar, A.1997. Organizational Bahaviour.

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**THEORY**

No. of lecture(s)	Topics	Weightage
1	Role of agriculture in Indian economy	8
2	Problems and policy changes relating to farm supplies, farm production	8
3	Agro processing, agricultural marketing, agricultural finance etc. in the country.	8
3	Impact of globalization on agribusiness sector	8
2	Structure of agriculture	8
3	Linkages among sub-sectors of the agribusiness sector	8
3	Economic reforms and Indian agriculture	8
3	Agribusiness- concepts and approach, evaluation of systems	8
3	Emerging trends in production, processing, marketing and exports	10
3	Policy controls and regulations relating to the industrial sector with specific reference to agro-industries.	8
3	Agribusiness policies-concept and formulation, new dimensions in Agri business environment and policy.	10
3	Agricultural price and marketing policies, distribution system and other policies	8
32	<b>Total</b>	<b>100</b>

**SUGGESTED READINGS**

1. Adhikary, M. 1986. Economics Environment of Business. S. Chand and Sons.
2. Aswathappa, K. 1997. Essentials of Business Environment. Himalaya Publ.
3. Francis Cherunilam. 2003. Business Environment. Himalaya Publ.
4. Kulkarni. B. D. 1996. Economic Analysis and Business Policy.
5. Khan, M. Y. and Jain, P. K. 1997. Financial Management.
6. Chandra, P. 1997. Financial Management.
7. Shete, N. B. 2000. Financing Agri-Business.

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**ABM 503**  
**CREDITS : 3=3+0**

**MANAGERIAL ECONOMICS**

**THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
2	Scope of managerial economics, objective of the firm and basic economic principles, mathematical concepts used in managerial economics.	6
2	Relevance of micro and macro economics in management decisions	6
2	Demand analysis- meaning, types and determinants of demand	6
3	Demand function; demand elasticity, demand forecasting-need and techniques	6
3	Theory of consumer behaviour	8
2	Production cost and supply analysis	7
2	Production functions	6
1	Least-cost input combination	4
1	Factor productivities and returns to scale	5
1	Cost concepts	6
2	Cost-output relationship	5
2	Short and long-run supply functions	6
3	Pricing- determinants of price-pricing under different market structures	8
1	Pricing of joint products	5
1	Pricing methods in practice	6
1	Government policies and pricing.	6
2	The national income	6
2	Circular flow of income	5
3	Consumption	6
2	Investment and saving	4
1	Money-functions	4
3	Money- demand and supply	5
2	Inflation	4
1	Economic growth	4
1	Business cycles	5
1	Business policies	6
1	Business decisions under uncertainty	5
<b>48</b>	<b>Total</b>	<b>150</b>

## **SUGGESTED READINGS**

1. Baumol, W. J. 1980. Economics Theory and Operations Analysis. Prentice Hall of India.
2. Craig, P. H and Chris, L. W. 1996. Managerial Economics. Prentice Hall of India.
3. Dernberg, T. F. *et. al.* 1986. Macro Economics: Concepts, Theories and Policies. McGraw Hill.
4. Dwivedi, D.N. 2002. Managerial Economics. Vikash Publ.
5. Gupta, G. S. 1997. Managerial Economics. Tata McGraw Hill.
6. Koutsoyiannis, A. 1989. Modern Micro Economics. MacMillan Press.
7. Varshney and Maheshwari. Managerial Economics. S. Chand and Sons, New Delhi.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Financial accounting- meaning, need, concepts and conventions	3
1	Branches of accounting, internal and external users of accounting, advantages and limitations of financial accounting, accounting standards	3
1	The double entry system- its meaning and scope, the journal, cash book, ledger	4
1	Trial balance, trading account, profit and loss account, balance sheet	3
1	Entries and adjustments of different heads in different books and accounts, introduction of company accounts	3
1	Managing accounting-meaning, functions, scope, utility, limitations and tools of management accounting	4
1	Analysis of financial statements ratios, comparative and common size statements, cash flow and funds flow analysis	3
1	Management audit and financial audit	3
1	Cost accounting-nature, course objective, significance of cost accounting	3
1	Classification of cost, costing for material, labour, and overheads	3
1	Marginal costing and cost volume profit analysis- its significance, uses and limitations	3
1	Standard costing-its meaning, uses and limitations; determination of standard costing. Variance analysis- material, labour and overhead	3
1	Responsibility accounting- its meaning and significance, cost, profit and investment centres	3
1	Accounting for price level changes- concepts, CPP and CCA methods. Budget and budgetary control- its meaning, uses and limitations	3
1	Budgeting and profit planning, different types of budgets and their preparations, sales budget, purchase budget, production budget	3
1	Cash budget, flexible budget, master budget, zero based budgeting	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practical work will lead to the exposure of students to uses and applications of financial accounting procedures

<b>No. of practical (s)</b>	<b>Name of the practical</b>	<b>Weightage</b>
2	Exposure to financial accounting	7
6	Practical examples of accounting and writing various books and ledgers.	18
2	Studies of various financial indicator's, ratio's etc.	7
3	Studies on standard costing.	9
3	Preparation of different types of Budgets.	9
<b>16</b>	<b>Total</b>	<b>50</b>

### SUGGESTED READINGS

1. Horngren. 2008. Introduction to Financial Accounting. 8<sup>th</sup> Ed. Pearson Edn.
2. Khan, M. Y and Jain, P. K. 2004. Management Accounting. Tata McGraw Hill.
3. Mahaeshwari, S. N and Maheshwari, S. K. 2003. Financial Accounting. 3<sup>rd</sup> Ed. Vikas Publ. House.
4. Pandey, I. M. 1998. Management Accounting. 3<sup>rd</sup> Edn.
5. Inamdar, S. M. 1997. Cost and Management and Accounting.
6. Sharma, P. K. 1996. Management Accounting: Principles and Practice.

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## THEORY

No. of lecture(s)	Topics	Weightage
2	Introduction to communication, communication process, barriers to communication	4
1	Effective communication, types of communication in organizations viz; downward, upward, horizontal, static V/s dynamic	3
1	Non-verbal communication, communication through clothes/ colours / space/ symbol	3
1	Body language and etiquettes	3
1	Interpersonal communication	3
1	Self-concept and communication, assertive communication	3
1	Corporate communication, different techniques of communication voice, importance of listening, listening skills test	3
1	Types of business writing viz; news letters, reports, folders, fact sheets, press release	4
1	Readership and writing style- human aspects of writing	4
1	Meetings- planning for meeting, tips for chairing, opening, progress and ending	4
1	Meeting- behaviour of ordinary members, the character of business meeting, energies for meetings	4
1	Group discussions, brain storming sessions and presentations	3
1	Handling personal communication- letters, dictation, reading, problem solving	3
1	Listening skills, self-talk, self-reflection	3
1	Step to personal creativity, public speaking	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practicals aim at making the students well versed with business related communication.

No. of practical (s)	Name of the practical	Weightage
1	Types of communication in organization: downward, upward, horizontal communication	4
1	Types of communication in organization: static v/s dynamic	4
1	Body language	3
1	Etiquettes	3
1	Writing news letters	3
1	Writing reports	3
1	Writing folders	3
1	Writing fact sheets	3
1	Writing press release	3
1	Different types of writing styles	3
1	Conduct of meeting	3
1	Conduct of group discussion	3
1	Conduct of brain storming session	3
1	Presentation	3
1	Listening skills	3
1	Public speaking	3
16	<b>Total</b>	<b>50</b>

### SUGGESTED READINGS

1. Bovee. 2008. Business Communication Today. 7<sup>th</sup> Ed. Pearson Edu.
2. Brown, L. 2006. Communication Facts and Ideas in Business. Prentice Hall.
3. Lesikar. 2004. Basic Business Communication. McGraw Hill.
4. Ramchandran, K. K, Lakshmi, K. K and Karthik, K. K. 2007. Business Communication. MacMillan Hill.
5. Adair, J. 2003. Effective communication. Pan MacMillan.
6. Ludlow, R and Panton, F. 1998. The Essence of Effective Communications. Prentice Hall of India.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Introduction to Indian legal system	4
1	The Indian Contract Act- 1872	4
1	Contract- meaning, nature, significance, types of contract	4
1	Essentials of a valid contract, offer and acceptance	4
1	Capacity to contract, free consent, performance of contract	4
1	Companies Act- 1956	4
1	Incorporation, commencement of business	4
2	Types of companies, management	4
1	Winding of companies	4
1	Negotiable Instruments Act	4
1	Essential Commodities Act	4
1	APMC Act	4
1	Consumer Protection Act	4
1	RTI Act	4
1	MRTP Act- major provisions and implications	4
2	Factory Act	4
2	Labour laws,	4
2	Industrial dispute Act	4
2	Nature and importance of ethics and moral standards	4
2	Corporations and social responsibilities	4
1	Scope and purpose of business ethics	4
1	Ethics in business functional areas	4
1	Industrial espionage	4
2	Solving ethical problems	4
1	Governance mechanism	4
<b>32</b>	<b>Total</b>	<b>100</b>

## SUGGESTED READINGS

1. Gulshan, S. S and Kapoor, G. K. 2003. Business Law including Company Law. 10<sup>th</sup> Ed. New Age Publ.
2. Kapoor, N.D. 2005. Business Law. S. Chand and Sons.
3. Tulsain, P.C. 2006. Business Law. Tata McGraw Hill.
4. Tuteja, S. K. 2005. Business Law for Managers. S. Chand and Sons.
5. Maheshwari. 1998. Administrative Thinkers.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	The concept of marketing management	3
1	Marketing environment	3
1	Marketing mix	3
1	Strategic marketing	3
1	Market segmentation	3
1	Targeting, positioning and buyer behavior	3
2	Marketing information system, marketing organization and control	4
2	Classification and types of markets, markets concepts and techniques, market research, market differentiation	6
2	Marketing potential and forecasting	6
1	Classification of products	4
1	Product life cycle	4
1	New product development	4
2	Product line and product mix- branding, packaging and labeling	4
1	Product management, BCG matrix, product and quality	4
1	Factors affecting prices, pricing policies and strategies	4
2	Demand estimation - pricing decisions and strategies, pricing methods	5
1	Types of distribution channels; distribution network	4
1	Functions of channel members	4
1	Channel management decisions	4
1	Promotion mix	4
1	Introduction to advertising, personal selling, sales promotion	4
2	Product promotion, sales for management, maintaining competition, ecological marketing, direct marketing, consumer service	4
1	Publicity and public relations	4
1	Direct marketing	3
1	Managing integrated marketing promotion	3
1	Customer relationship management	3
<b>32</b>	<b>Total</b>	<b>100</b>

## PRACTICAL

The practical work will focus on basic concepts, tools and functions of marketing.

No. of practical (s)	Name of the practical	Weightage
2	Practical example on market segmentation and buyer behaviour	7
3	Estimation of market potential and forecasting	9
3	Studies on product life cycles, product line	9
3	Examples on different pricing policies and strategies, pricing methods	9
3	Type' s of distribution channels and the management decisions	9
2	Different aspect of marketing promotional activities of the products	7
<b>16</b>	<b>Total</b>	<b>50</b>

### SUGGESTED READINGS

1. Brassington. 1997. Marketing Management. Pitman Publ. House.
2. Kotler, P. 2002. Marketing Management- Analysis, Planning, Implementation and Control. Pearson Edu.
3. McCarthy. 2003. Marketing Management. Tata McGraw Hill.
4. Saxena, R. 2002. Marketing Management. McGraw Hill.
5. Stanton, W. J., Etzel, M. J and Walker, B. J. 1996. Fundamentals of Marketing. McGraw Hill.
6. Ramaswamy, V. S. and S. Namakumari. Marketing Management.
7. Sarwate, D. M. 1997. Indian cases of Marketing Management.
8. Saxena, R. 1997. Marketing Management Indian Orientation.
9. Gupta, S. L. 1999. Marketing Management.
10. Mishra, M. N. 1999. Marketing Management.
11. Rajannair, N. 1999. Marketing Management.
12. Ramaswamy V. S. 1999. Marketing Management.
13. Sarwate, D. M. 1997. Marketing Management.
14. Jhamb, L. C. 1997. Marketing Management.
15. Varkey, V. O. 1998. A hand Book of Marketing Management.

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**THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	Introduction to human resources management	3
1	Human resource planning- nature and significance	3
1	Job analysis, job description, job specification	3
1	Job enlargement, job enrichment, job rotation and job evaluation	3
1	Recruitment, selection process and induction	3
1	Training and human resource development- nature, significance, process and techniques	3
1	Internal mobility including transfers, promotions, employee separation	3
1	Performance appraisal- significance and methods, compensation management	3
1	Wage and salary administration- course objective; wage fixation- fringe benefits, incentive payment, bonus, and profit sharing	3
1	Industrial relations- role and status of trade unions	4
1	Collective bargaining	3
1	Worker's participation in management	4
1	Career planning and employee retention	3
1	Quality of work life, employee welfare measure, disputes and grievance	3
1	Handling procedures; arbitration and adjudication; health and safety of human resources	3
1	Human resources accounting, human resources outsourcing	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practicals will orient the students towards human resource practices and their utility for managers.

No. of practical (s)	Name of the practical	Weightage
3	Job perspective's in human resource management	9
3	Procedures in recruitment and selection, training and mobility of the human resource's	9
4	Management of wages and salaries and performance appraisal of selected organization.	14
3	Studies on industrial relationship between management and employees.	9
3	Social welfare aspects of the human resources.	9
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Ashwathpa, K. 1997. Human Resource Management. Tata McGraw.
2. Flippo, E. B. 1984. Personnel, Management. McGraw Hill.
3. Garry, D. 2001. Human Resource Management. 7<sup>th</sup> Ed. Prentice Hall of India.
4. Mamoria, C. B. 1996. Personnel Management. Himalaya Publ. House.
5. Subba Rao, P. 2004. Essentials of Human Resource Management and Industrial Relations. Himalaya Publ. House.
6. Venkantavatnam, C. S. and Srivastav, B. K. 1991. Personnel Management and Human Resources. Tata McGraw Hill.
7. Ganekar, A. 1997. Human Resource Management.
8. James, B. Shaw. 1997. Human Resource Management.
9. Wendell, L. French. 1997. Human Resource Management.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Introduction to financial management, its meaning and functions	3
1	Interface of financial management with other functional areas of a business	3
1	Financial statements and analysis - proforma balance sheet and income statements	3
1	Ratio, time series, common size and Du- Pont analysis	3
1	Capital structure, determinants of size and composition of capital structure	3
1	Capital structure theories- long term financing, estimation of returns and cost of capital	3
1	Working capital management, determinants of size and composition of working capital	3
1	Cash and receivables management, working capital management theories, financing of working capital	4
1	CreditT policies, cash and liquidity management	3
1	Financial planning and forecasting	3
1	Financial planning for mergers and acquisition	3
1	Capital budgeting	3
1	Undiscounted and discounted cash flow methods of investment appraisal	4
1	Hybrid financial management and lease finance	3
1	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	3
1	Business solutions decision making under uncertainty, decision principles and practices in valuation of firms	3
<b>16</b>	<b>Total</b>	<b>50</b>



## PRACTICAL

The practicals will focus on developing understanding of the application of financial and investment decisions.

No. of practical (s)	Name of the practical	Weightage
1	Preparation of hypothetical financial statement and its analysis	4
2	Role of capital, its determination of size and composition for given data	4
2	Determination of size and composition of working capital and its management	4
1	Studies on cash- flow methods of investment appraisal	4
2	Study of financial statements and analysis	5
1	Study of financial planning and forecasting	4
1	Study of capital budgeting	4
1	Study of hybrid financial management and lease finance	4
1	Study of money and capital markets in India	4
1	Study of business financing system in India	4
2	Study of business solutions decision making under uncertainty, decision principles and practices in valuation of firms	5
1	Study of micro finance and international financial management	4
<b>16</b>	<b>Total</b>	<b>50</b>

### SUGGESTED READINGS

1. Chandra, P. 2000. Financial Management. Vikas Publ.
2. Khan, M. Y. and Jain, P. K. 2004. Financial Management: Text, Problems and Cases. Tata McGraw Hill.
3. Pandey, I. M. 1997. Financial Management. Vikas Publ.
4. Ramachandran, N and Kakani, R. K. 2005. Financial Accounting for Management. Tata McGraw Hill.
5. Van Horne, J. C. 1997. Financial Management and Policy. Prentice Hall.

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**ABM 510**

**PRODUCTION AND OPERATIONS MANAGEMENT**

**CREDIT: 2=1+1**

**THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	Meaning, nature and scope of production and operations management	3
2	Relationship with other systems in the organization, factors affecting system and concept of production and operation management	4
1	Facility location, types of manufacturing systems, layouts, layout planning and analysis	4
1	Productivity variables and productivity measurement, production planning and control	4
1	Mass production, batch production, job order manufacturing	3
1	Product selection, product design and development	3
1	Process selection & capacity planning, scheduling, maintenance management- meaning and importance	3
1	Work measurement, work sampling and work environment	3
1	An overview of material management, determination of material requirement	3
1	Purchase management, store management, logistics management- meaning and importance	4
1	Material planning and inventory management, Just in Time technique (JIT)	4
1	Industrial safety and safety management	3
1	Quality assurance and accepting sampling, statistical process control	3
1	Total quality management, ISO standards and their importance	3
1	Introduction to re-engineering and value engineering	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practical work will expose the learners to the field of production and operations management.

No. of practical (s)	Name of the practical	Weightage
1	Selection of the operational unit	2
1	Collection of the data on existing operations	5
2	Tracing out the facility location of the operation unit.	5
2	Design the existing schedule of the operations	5
1	Study of the purchase procedure of the operation unit.	5
2	Determination of the material management of the unit	5
1	Determination of the logistics design of the unit	5
2	Study of the work measurement techniques of the unit	5
2	Study of the need of the JIT in the unit	5
2	Suggestions for the improvement of the unit	8
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Adam & Ebert. 2006. Production and Operations Management: Concepts, Models and Behaviour. 5th Ed. Prentice Hall of India.
2. Buffa, E.S. 2008. Modern Production/Operations Management. Wiley India.
3. Stevenson, W. J. 2005. Operations Management. Tata McGraw Hill.
4. Jhamb, L. C. 1996. Production Management.
5. Seetharama, L. Narsimhan., Dennis, W. Mcleavy and Peter, J. Billington. Production, Planning and Inventory Control. Prentice Hall of India Pvt, Ltd.
6. Rastogi, P. N. 1995. Reengineering and reinvesting the enterprise. Wheeler Publ. New Delhi.
7. Green, J. H and Homewood. Production and Inventory Control.
8. Robertas, R. 1197. Operations Management.

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**THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	Research methodology- meaning, objective and types	4
1	Process of research, research- exploratory, descriptive, experimental & diagnostic	4
1	Problem formulation, setting of course objective, formulation of hypotheses	3
1	Scales of measurement - nominal, ordinal, interval, ratio, Likert scale and other scales	3
1	Primary and secondary data, sources of data	3
1	Instruments of data collection	3
1	Data editing & classification	3
1	Coding, validation & tabulation	3
1	Presentation and analysis	3
1	Concept of sampling, probability and non-probability sampling techniques	3
1	Simple Random sampling, Stratified sampling	3
1	Multi-stage sampling, Systematic sampling, Purposive sampling, Quota sampling, Judgment sampling and Convenience sampling	4
1	Sample size determination, sampling and non-sampling errors	3
1	Role and uses of quantitative techniques in business decision making	3
1	Use of Equations	3
1	Use of determinants and matrices in business decisions	3
1	Frequency distribution	3
2	Measures of central tendency	6
2	Measures of variation, Skewness and Kurtosis	6
1	Simple, partial and multiple correlation	3
1	Rank correlation	3
1	Simple and multiple regression	3
1	Discriminate and dummy variable analysis	3
1	Index Numbers	3
1	Hypotheses testing, ANOVA, Factor analysis	4
1	Cluster analysis	3
1	Conjoint analysis	3
1	Multi-dimensional analysis	3
1	Report writing- types of report	3
1	Essentials and contents of good report writing	3
<b>32</b>	<b>Total</b>	<b>100</b>

## PRACTICAL

The practicals will acquaint the students regarding the report write up of the projects.

No. of practical (s)	Name of the practical	Weightage
1	Selection of the research project on existing ABM problems	2
2	Collection of literature to define hypotheses	5
1	Defining objectives and hypotheses for the research project	5
2	Collection of the data for the research project	5
2	Tabulation and compilation of the data for research project	5
2	Analysis of the data for the research project	5
2	Interpretation of the results	5
2	Report writing of the research project	5
1	Preparation of the executive summary report	5
1	Policy implications of the report	8
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Cooper, D. R & Schindler, P. S. 2006. Marketing Research Concepts and Cases. Tata McGraw Hill.
2. Green, P. E., Tull, D. S & Albaum, G. 1998. Research for Marketing Decisions. Prentice Hall of India.
3. Kothari, C. R. 1989. Research Methodology. Wiley Eastern.
4. Wilkinson & Bhandarker. 1989. Research Methods in Social Sciences. Himalaya Publ. House.
5. Kulkarni, B. D. 1996. Research Methodology.

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**ABM 512 PROJECT MANAGEMENT AND ENTREPRENEURSHIP  
DEVELOPMENT  
CREDIT: 2=1+1**

**THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	Concept of project, characteristics of projects	3
1	Types of projects, project identification, projects life cycle	3
1	Project feasibility, market feasibility, technical feasibility, financial feasibility and economic feasibility, social cost-benefit analysis, Project risk analysis	4
1	Network methods- network analysis, requirements for network analysis	3
1	Critical Path Method (CPM) and Programme Evaluation and Review Technique (PERT)	4
1	Project scheduling and resource allocation	3
1	Financial appraisal/evaluation techniques- discounted/non-discounted cash flows	3
1	Net present values, Profitability index, Internal rate of returns	3
1	Pay back period, Project Cost Benefits ratio, Accounting rate of return	3
1	Implementation, cost over run, project control and information system	3
1	Entrepreneurship, significance of entrepreneurship in economic development	3
1	Qualities of entrepreneur, entrepreneurship development programs	3
1	Role of various institutions in developing entrepreneurship, life cycles of new business	3
1	Environmental factors affecting success of a new business	3
1	Reasons for the failure and visible problems for business	3
1	Developing effective business plans, procedural steps in setting up of an industry	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practicals will focus on development of new project proposal.

No. of practical (s)	Name of the practical	Weightage
1	Selection of the enterprise with existing opportunities	2
1	Defining the budget for the setting up of the enterprise	4
1	Defining the potential demand with market feasibility study	4
1	Identify the financing agencies for the enterprise	4
2	Identify the layout and operation design for the enterprise	6
3	Evaluate the project proposal with financial ratios	6
3	Evaluate the project with CPM and PERT methods	6
2	Study of the entrepreneurship development activities	5
1	Outline the steps to be followed for the set-up of the enterprise	5
1	Documentation of the proposal	8
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Chandra, P. 2005. Project Management. Tata McGraw Hill.
2. Gopal Krishan, P & Nagarajan, K. 2005. Project Management. New Age.
3. Hisrich, R.D. & Peters, M. P. 2002. Entrepreneurship. Tata McGraw Hill.
4. Kaplan, J. M. 2003. Patterns of Entrepreneurship. John Wiley & Sons.
5. Nandan, H. 2007. Fundamentals of Entrepreneurship Management. Prentice Hall.
6. Ramamoorthy, V. E. 2005. Textbook of Project Management. MacMillan.
7. James, P. Lewis. Project Planning, Scheduling and Control. Tata MacMillan Publ. Co. Ltd.
8. Nagarajan. K. Project Management.
9. Desai, V. Dynamics of Entrepreneurship Development.
10. Chandra, P. 1997. Project Planning Analysis Selection.
11. Patankar, S. V. 1998. Project Planning Analysis.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Concept of Computers	3
1	Brief history of computers and its generations, evolution of computers	3
1	Characteristics of computers, hardware and software	3
1	Introduction to computer languages, main areas of computers and their applications	3
1	Types of computers – analog, digital & hybrid, general purpose and special purpose computers, micro computers, mini-computers, main-frame computers and super computers	4
1	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	3
1	Data and Information – data definition, data processing systems	3
1	Data type- numeric, alphabetic, audio, graphic and video presentation	3
1	Data processing- introduction to data processing	3
1	Computer as a tool for data processing, data processing cycle, data processing techniques	3
1	Data analysis, data inputs and outputs	3
1	Data processing management, data security	3
1	Introduction to Operating Systems, MS Windows, UNIX and MS Office	3
1	MS Word, MS Power Point, MS Excel, MS-Access, Management software's Like SPSS	4
1	Data feeding and analysis by various tools LP, ARIMA, Markov chain analysis technique	3
1	Introduction to LAN, WAN, MAN, internet, Search engines, Introduction to agri-portals like agriwatch.com, agmarknet.nic.in, echaupal.com	3
<b>16</b>	<b>Total</b>	<b>50</b>



## PRACTICAL

The students will be exposed to use of computers and simple applications of computers in managerial decisions.

No. of practical (s)	Name of the practical	Weightage
1	Selection of the analytical problem	5
1	Defining the objectives and hypothesis	5
1	Defining the statistical methodology	5
1	Data feeding in computers and compilation of the data	5
2	Analysis of the data with MS Excel.	5
3	Analysis of the data with statistical software	5
3	Interpretation of the results	5
2	Report writing with MS word.	5
1	Preparation of the presentation slides	5
1	Suggestions for the improvement in the computer-aided techniques	5
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Lucas. 2004. Information Technology for Management. McGraw Hill.
2. Norton, P. 1998. Introduction to Computers. 2nd Ed. Tata McGraw Hill.
3. Rajaraman, V. 2006. Introduction to Information Technology. Prentice Hall of India.
4. Basandra, S. K. Computers Today.
5. Oka, M. M. 1997. Computer Fundamentals.

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## THEORY

No. of lecture(s)	Topics	Weightage
3	The concept of MIS – definition, importance, course objective, prerequisites	6
1	Advantages and challenges for organization	4
2	Information needs of organization	4
1	MIS and decision making	5
1	Types/classification of information system for organizations	5
1	Office automation systems	4
1	Transaction processing systems	4
1	Decision support system	4
1	Executive support system, knowledge based expert system	4
1	Electronic business system for managerial decision supports	5
2	Applications of MIS in human resource management	5
2	Applications of MIS in financial management	5
2	Applications of MIS in production/operations management	5
1	Applications of MIS in materials management	5
3	Applications of MIS in marketing management	6
1	Development of MIS for an organization	4
2	The concept and stages of system development life cycle	5
2	Information technology– concept, applications, advantages and prerequisites, choice of information technology	6
1	Security, privacy and ethical issues in information systems and internet	4
2	Legal dimension of IT	6
1	Social dimension of IT	4
<b>32</b>	<b>Total</b>	<b>100</b>

## SUGGESTED READINGS

1. James, O'Brien. 1999. Management Information System. Tata McGraw-Hill.
2. Laudon & Laudon. 2003. Management Information System. Pearson Edu.
3. O' Brein. Management Information Systems.
4. Oka. M. M. 1997. Management Information Systems.
5. Lucey, T. 1995. Management Information Systems.
6. Varma, M. M. and Agarwal, R. K. 1998. Management Information Systems.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Introduction to Linear Programming, objective and assumptions of Linear Programming	4
3	Formulation of Linear Programming Problem, Graphic Method, Simplex method, Transportation and Assignment Problems	5
2	Duality and Sensitivity analysis	5
1	Inventory control models, costs involved in Inventory Management, Types of Inventory	4
1	Economic Order Quantity (EOQ) Model, Continuous Review (Q) System, Periodic Review (P) System, Hybrid System	4
1	Waiting Line Models: Waiting Line Problem, Characteristics of a Waiting Line System	3
1	Single- Channel Model, Multiple-Channel Model, Constant Service Time Model, Finite Population Model, Sequencing and Replacement models	4
1	Decision making under risk and uncertainties, Decision problems	3
1	Maximax Criterion, Maximin Criterion, Minimax Regret Criterion, Laplace Criterion	4
1	Pay off Tables, Decision Trees	3
1	Expected Value of perfect Information	3
1	Game Theory - Two -Person Zero-Sum Game	4
1	Simulation Technique	4
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practical work will include the examples on the formulation of the Linear Programming Problem, Simplex method, M-Charnes Technique, Simulation technique, Game theory, Transportation model

No. of practical (s)	Name of the practical	Weightage
5	Formulation of the Linear Programming Problem	10
2	Application of the Simplex method	10
1	Application of the Transportation model to real situation	6
1	Estimation of the economic order quantity - Continuous review	3
1	Estimation of the economic order quantity - Periodic review	3
1	Estimation of the economic order quantity - Hybrid system	3
2	Use of Single Channel Model, Multiple Channel Model, Constant Service Time Model, Finite Population Model, Sequencing and Replacement models for the ABM problems	6
1	Decision making with different Game theory criteria	3
1	Application of Simulation technique to the ABM problems	3
1	Design the waiting line model for practical situation	3
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Cook, T. M & Russell, R. A. 1989. Introduction to Management Science. Prentice Hall.
2. Taha, H. A. 2005. Operations Research - An Introduction. Prentice Hall.
3. Vohra, N. D. 2006. Quantitative Techniques in Management. McGraw Hill.
4. Wagner, H. M. 2005. Principles of Operation Research. Prentice Hall.
5. Sharma. Operation Research.
6. Jhamb, L. C. 1996. Quantitative Techniques.
7. Sancheti, D. C. Quantitative Techniques.
8. Chitale. 2008. Quantitative Methods.
9. Hadley, G. Linear Programming Methods.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Concept and scope of rural marketing	2
1	Nature and characteristics of rural markets, potential of rural markets in India	3
1	Rural communication and distribution	3
1	Environmental factors, socio-cultural, economic, demographic, technological and other related factors affecting rural marketing	4
1	Rural consumer's behaviour - behaviour of rural consumers and farmers	3
1	Buyer characteristics and buying behaviour: rural v/s urban markets	4
1	Customer relationship management	3
1	Rural market research, rural marketing strategy	3
1	Marketing of consumer's durable and non-durable goods and services in the rural markets with special reference to product planning and product mix	4
1	Pricing course objective, product augmentation for rural market and pricing decision	3
1	Pricing policy and pricing strategy	3
1	Distribution strategy	3
1	Promotion and communication strategy, media planning- planning of distribution channels	3
1	Message design and development for rural marketing, rural promotion efforts building relationship, diversity of rural promotion events, dynamics of distribution process, physical distribution process	3
1	Organizing personal selling in rural markets in India	3
1	Innovation in rural marketing	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practical work will include the understanding regarding issues in rural markets like marketing environment, consumer behaviour, distribution channels, marketing strategies, etc.

No. of practical (s)	Name of the practical	Weightage
1	Selection of the project on rural marketing problem (like: seed, fertilizers, pesticides etc.)	5
1	Collection of literature to define hypotheses	5
1	Defining the objectives and hypotheses for the marketing problem	5
3	Collection of the data for the market project- methods	5
2	System of tabulation and compilation of the data	5
3	Analysis of data for studying the market problems	5
2	Interpretation of the results	5
1	Report writing of the market project	5
1	Preparation of the executive summary report	5
1	Policy initiatives for the market improvement	5
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Krishnamacharyulu, C & Ramakrishan, L. 2002. Rural Marketing. Pearson Edu.
2. Ramaswamy, V. S & Nanakumari, S. 2006. Marketing Management. 3rd Ed. MacMillan Publ.
3. Singh, A. K & Pandey, S. 2005. Rural Marketing. New Age.
4. Singh, Sukhpal. 2004. Rural Marketing. Vikas Publ. House.
5. Beri, G. C. Marketing Management, Tata McGraw Hill Publishing Company Ltd, New Delhi.
6. David, W. Cravens. 1996. Marketing management.
7. Sheth, Mittal and Thomson. Customer Behaviour- A Managerial Perspective.
8. Acharya, S. S. and Agarwal, N.L.. 2004. Agricultural Marketing in India. 4th Ed. Oxford & IBH.

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**THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	Agricultural marketing, agricultural marketing and economic development	2
1	Agricultural market structure, components and dynamics of market structure	3
1	Marketing strategy, formulation of marketing strategy	4
1	Agribusiness marketing environment, design of marketing mix, market segmentation and targeting	3
1	Determinants of consumer's behaviour	3
1	Product management, product management process and decisions	3
1	New product development- significance and classification of new product	3
1	Stages and estimation of demand of new product, product life cycle	4
1	Pricing policies and practices for agribusiness - determinants of price, objectives of pricing policies and pricing methods	3
2	Logistics- concepts, factors affecting logistics, objectives of logistics management, activities of logistics function order, processing, packaging, transport management inventory, warehousing etc.	4
1	Promotional management, advertising, planning and execution	4
1	Sales promotion, grading and standardization	4
1	Distribution management- storage & warehousing, transportation	4
1	Management for agricultural products	3
1	Marketing agencies/intermediaries, roles and functions of marketing agencies	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practicals are designed to give an understanding of concept, various policies, strategies and decisions relating to marketing in agribusiness firms.

No. of practical (s)	Name of the practical	Weightage
1	Selection of the project on marketing management problem (like prices, market practices and strategies)	4
1	Collection of literature to define hypotheses	6
1	Defining the objectives and hypotheses for the marketing problem	5
2	Different methods of data collection for study the management problem	4
1	System of tabulation and compilation of the data	5
2	Analysis of data for the market problem	6
2	Interpretation of the results	5
2	Report writing of the project	5
2	Preparation of the executive summary report	5
2	Listing of the policy implications for marketing management- Prices, strategies	5
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Acharya, S. S. and Agarwal, N.L.. 2004. Agricultural Marketing in India. 4th Ed. Oxford & IBH.
2. Kohls, R. L & Uhl, J. N. 2005. Marketing of Agricultural Products. 9th Ed. Prentice Hall.
3. Kotler, P. 2002. Marketing Management – Analysis, Planning, Implementation and Control. Pearson Edu.
4. Krishnamacharyulu, C & Ramakrishan, L. 2002. Rural Marketing. Pearson Edu.
5. Ramaswamy, V. S & Nanakumari, S. 2002. Marketing Management. 2nd Ed. Mac Millan India.
6. Beri, G.C. Marketing Management, Tata McGraw Hill Publishing Company Ltd, New Delhi.
7. Saxena, R. 2002. Marketing Management. McGraw Hill.
8. Christopher, M. L. Logistics and Supply Chain management.
9. Gupta, S. L. 1999. Marketing Management
10. Mishra, M. N. 1999. Marketing Management.
11. Rajannair, N. 1999. Marketing Management.
12. Ramaswamy. V. S. 1999. Marketing Management.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Present status of food industry in India, organization in food industry	2
1	Introduction to operations of food industry	3
1	Deteriorative factors and hazards during processing, storage, handling and distribution	3
1	Basic principles of food processing, food preservation by manipulation	3
1	Application of energy, radiations, chemicals and biotechnological agents	3
1	Packaging of foods	3
1	Analysis of costs in food organization	3
1	Risk management	3
1	Laws and regulations related to food industry and food production and marketing, quality management	3
1	Prevention of food adulteration, ISO standards	3
1	Case studies on project formulation, milk and dairy products, cereal milling, oil-seed and pulse milling, oil and fat processing	5
1	Case studies on sugarcane milling, honey production, baking, confectionery	4
1	Case studies on processing of fruits- fruit jam, jellies etc.	3
1	Case studies on fruits and vegetable storage and handling	3
1	Case studies on vegetables processing-tomato ketchup etc.	3
1	Case studies on egg, poultry, fish, meat handling and processing	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practical work will acquaint the students with different food processing techniques and their management.

No. of practical (s)	Name of the practical	Weightage
1	Demonstration of various machineries used in food processing	4
1	Preservation of food by using chemicals	4
1	Preservation of food by irradiation	4
1	Food preservation by fermentation	4
2	Packaging of food by using paper boards, plastic films, tetra packs etc.	6
1	Quality evaluation of raw material	4
1	Evaluation of food standards	4
1	Visit to fruit and vegetable market for quality assessment	4
2	Visit to units with ISO standard/HACCP certification	6
5	Preparation of project reports for cereal, legume, oilseed, milk & milk products, fruit and vegetable processing units	10
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Acharya, S. S. & Aggarwal, N. L. 2004. Agricultural Marketing in India. Oxford & IBH.
2. Early, R. 1995. Guide to Quality Management Systems for Food Industries. Blackie.
3. Jelen, P. 1985. Introduction to Food Processing. Reston Publishing.
4. Potly, V.H. & Mulky, M. J. 1993. Food Processing. Oxford & IBH.
5. Krammer A and Twigg BA. 1973. Quality Control in Food Industry, Vol. I, II, AVI Publ.
6. Ramaswamy H and Marcotte M. 2006. Food Processing : Principles and Applications. Taylor and Francis.
7. Verma L.R. and Joshi V.K. 2000. Post Harvest Technology of Fruits and Vegetables. Indus Publ.

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**ABM 519 FERTILIZER TECHNOLOGY AND MANAGEMENT****CREDIT: 2=2+0****THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
2	Fertilizer development- concept, scope, need and resource availability, types of fertilizers and chemical constituents	8
2	Role of fertilizers in agricultural production	5
2	Production and consumption of fertilizers in India	5
2	Import and export avenues for fertilizers	5
2	Principles of manufacturing of nitrogenous, phosphatic and potassic fertilizers	8
2	Raw material needed for manufacturing of nitrogenous, phosphatic and potassic fertilizers	8
2	Secondary nutrient sources and micronutrients formulation	5
2	Production efficiency and capacity utilization of fertilizers	7
2	Quality control and legal aspects of fertilizer control order	7
2	Constraints in fertilizer use and emerging scenario of fertilizer use	7
2	Environmental pollution due to fertilizers use	5
2	Assessment of demand and supply of different fertilizers	5
2	Fertilizer pricing policy	6
2	Fertilizer storage and fertilizers distribution	5
2	Scope of bio-fertilizers	6
2	Field trials and demonstrations	8
<b>32</b>	<b>Total</b>	<b>100</b>

**SUGGESTED READINGS**

1. Brady, N.C. & Weil, R. R. 2002. The Nature and Properties of Soils. 13<sup>th</sup> Ed. Pearson Edu.
2. Fertilizer Control Order (different years). Fertilizer Association of India, New Delhi.
3. Fertilizer Statistics (different years). Fertilizer Association of India, New Delhi
4. Indian Journal of Fertilizers (different years). Fertilizer Association of India, New Delhi.

5. San Chilli, V. 1960. Chemistry and Technology of Fertilizers. American Chemical Soc. Monograph Series. Reinhold Publ. Corp.
6. Tisdale, S. L, Nelson, W. L, Beaton, J. D. & Havlin, J. L. 2002. Soil Fertility and Fertilizers. 5<sup>th</sup> Ed. Prentice Hall.
7. Chopra, S. L. and Kanwar, J. S. (1991) Analytical Agril. Chemistry, Kalyani Pub. New Delhi.
8. Mostara, M. R. and Verma, K. P. S. 1982. Monograph of fertilizer quality control for fertilizer analysis/ Inspectors, Central fertilizer quality control.
9. Yawalkar, K. S. and Agarwal, J. P. and Bodke, S. 1972. Manures and fertilizers. Agril. Publication Nagpur.
10. -----(1980) Hand Book of fertilizer use, FAI Publication.
11. Subbarao, N. S. (1986). Bio-fertilizers in Agriculture. Oxford and IBH Publication Co. New Delhi.
12. ICAR. (1971) Handbook of manures and fertilizers.

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## THEORY

No. of lecture(s)	Topics	Weightage
2	Definition and classification of agro-chemicals. Basic knowledge of agro-chemicals, role and status of agro-chemical industry in India.	6.25
2	Pesticides definition, classification, knowledge of different pesticides with suitable examples.	6.25
2	Insecticides-definition, classification based on mode of entry, mode of action and chemical nature with examples.	6.25
2	Insecticide formulations, different types, active ingredients and other ingredients used in formulation.	6.25
2	Mode of action of different insecticidal groups.	6.25
2	Plant protection equipments, sprayers and dusters, their types, working principles.	6.25
2	Fungicides definition, classification with suitable examples.	6.25
2	Mode of action of different fungicides.	6.25
2	Weedicides definition, classification with suitable examples.	6.25
2	Rodenticides, acaricides and nematocides	6.25
2	Post-harvest chemicals and preservation of agro commodities	6.25
2	Insecticide poisoning, symptoms and treatments.	6.25
2	Development of agrochemicals, insecticide act.	6.25
2	Directorate of plant protection quarantine and storage; its' organizational set up.	6.25
2	IMP concept, bio-pesticides and plant products.	6.25
2	Central Insecticide Board organizational set up insecticide registration of pesticides.	6.25
<b>32</b>	<b>Total</b>	<b>100</b>

## SUGGESTED READINGS

1. Dhaliwal, G. S, Singh, R. & Chhillar, B. S. 2006. Essentials of Agricultural Entomology. Kalyani.
2. Hayes, W. T & Laws, E. T. 1991. Handbook of Pesticides. Academic Press.

3. Matsumura, F. 1985. Toxicology of Insecticides. 2nd Ed. Plenum Publ.
4. Rajeev, K. & Mukherjee, R. C. 1996. Role of Plant Quarantine in IPM. Aditya Books
5. Kearney, P.C. and Kaufman, D.D. 1996. Role of Plant Quarantine in IPM. Aditya Books.
6. Sree Ramula, U. S. 1979. Chemistry of Herbicides, Oxford and IBH Pub. Co., New Delhi.
7. Sree Ramula, U. S. 1979. Chemistry of Insecticides and Fungicides, Oxford and IBH Pub. Co., New Delhi.
8. O' Brien, R. D. 1978 Insecticide Action and Metabolism.
9. Chattopadhyay, S. B. principals and procedures of Plant protection.
10. Bindra, O. S. Plant Protection Appliances.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Nature, scope and characteristics business management	2.5
1	Role of farm business management	2.5
1	Farm management decisions; farm management problems	2.5
1	Principles of farm management decisions	2.5
1	Principle of variable proportion and cost principle	3.5
1	Principle of factor substitution	3.5
1	Law of equi-marginal returns, opportunity cost principle	4
2	Tools of farm management and farm business analysis	5
1	Farm planning and budgeting	3.5
1	Farm records and accounts, types and problems in farm records and accounts, net worth statement, farm efficiency measures	4
1	Management of farm resources – land, labour, capital, farm machinery, farm building etc.	4
1	Risk and uncertainty in farming	3
1	Sources of uncertainty in farming	3.5
1	Management strategy to counteract uncertainty	3
1	Decision making process in farm business management under risks and uncertainty	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practical work will include the exercises those will 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

No. of practical (s)	Name of the practical	Weightage
1	Study of resources- Land, Labour, Capital, Farm machinery, Farm building etc.	5
1	Maintenance of farm records and accounts	4
1	Examples on variable proportion and cost concept	4
4	Estimation of cost of cultivation	4
1	Study of net worth statement, farm efficiency measures	4
1	Examples on law of diminishing marginal utility and Law of equi-marginal returns	4
1	Factor – Factor relationship	5
1	Product - Product relationship	4
1	Factor- Product relationship	4
1	Exercises on farm business analysis	4
1	Estimation of risk and uncertainty in farming	4
2	Study of farming systems	4
16	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Heady, E. O & Jensen, H. 1960. Farm Management Economics. Prentice Hall.
2. Johl, S. S & Kapoor, T. R. 1973. Fundamentals of Farm Business Management. Kalyani Publ.
3. Kahlon, A. S & Singh, K. 1992. Economics of Farm Management in India. Allied Publ.
4. Panda, S. C. 2007. Farm Management & Agricultural Marketing. Kalyani Publ.
5. Dhondyal. S. P. Farm Management.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Seed technology- role of seed technology, objective and goal	2.5
1	Planning and organization of seed programme	2.5
1	Types of seed programme – nucleus seed, breeders seed, foundation seed, and certified seed etc.	4
1	Seed industry in India, National Seed Corporation – Tarai Seed Development Corporation	3.5
1	State Seed Corporations, National Seed Project and State Farms and their role	4
1	Development and management of seed programmes	2.5
1	Seed village concept, basic strategy of seed production	2.5
1	Maintenance of genetic purity – minimum seed certification standard and management of breeders & nucleus seed	4
1	Management of seed testing laboratory, research and development	2.5
1	Management of seed processing plant	3.5
1	Seed storage management; seed packaging and handling	3.5
1	Seed marketing- GM crop seed	3.5
1	IPR, PBR, patents and related issues and their impact on developing countries	4
1	Statutory intervention in the seed industry	2.5
1	Seed legislation and seed law enforcement, seed act	2.5
1	Planning of seed production farms, seed processing units, NSC, RSSC, RSSCA and seed testing laboratories	2.5
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

To appraise students regarding principles and efficient management of seed production technology

No. of practical (s)	Name of the practical	Weightage
1	Exercise on Nucleus seed programme	4
1	Exercise on Breeders seed programme	4
1	Exercise on Foundation seed programme	4
1	Exercise on Certified seed programme	4
4	Management of seed programme of different crops	5
1	Planning and establishment of seed village	5
1	Study on seed testing and quality control	4
1	Working of seed processing plant	4
1	Issues in IPR	4
1	Seed production of Bt cotton	4
1	Seed legislation and seed law enforcement, seed act etc.	4
2	Visit to seed processing units	4
<b>16</b>	<b>Total</b>	<b>50</b>

### SUGGESTED READINGS

1. Agrawal, R. L. 1997. Seed Technology. Oxford & IBH.
2. Desai, B. B., Katecha, P. M. & Salunkhe, D. K. 1997. Seed Handbook: Biology, Production, Processing and Storage. Marcel Dekker.
3. Kelly, A. 1988. Seed Production of Agricultural Crops. Longman.
4. McDonald, M. B. Jr. & Copeland, L. O. 1997. Seed Production: Principles and Practices. Chapman & Hall.
5. Thompson, J. R. 1979. An Introduction to Seed Technology. Leonard Hill.

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**ABM 523  
PRODUCTS**

**TECHNOLOGY MANAGEMENT FOR LIVESTOCK**

**CREDITS: 2=1+1**

**THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	Present status of livestock products industry in India – dairy, meat poultry, skin, hides, wool etc.	4
1	Dairy products- manufacturing technologies of various dairy products	2.5
1	Dairy products- manufacturing technologies of various by-product utilization	3.5
1	Meat manufacturing technologies and meat products,	2.5
1	Manufacturing technologies of eggs and poultry products	2.5
1	Production, processing and utilization of wool and animal by-products	3.5
1	Plant management- production planning, control needs and techniques of production control	3
1	Packaging, preservation and storage system for livestock products	3.5
1	Transportation system for domestic markets and international markets	3.5
1	Quality control measures during storage and transit	3
1	Extent of losses during storage and transport	2.5
1	Management measures to minimize the losses	3
1	Marketing of animal products	3.5
1	Distribution of animal products	2.5
1	Quality standards for various livestock products	4
1	Environmental and legal issues in livestock products	3
16	<b>Total</b>	50

## PRACTICAL

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

No. of practical (s)	Name of the practical	Weightage
1	Dairy products manufacturing technologies and its marketing	3
1	Meat manufacturing technologies and its marketing	3
1	Management and marketing of eggs and poultry products	4
1	Processing and marketing of wool	4
1	Packaging, preservation and storage system for livestock products	4
1	Import and export of dairy products	4
1	Import and export of poultry products	4
1	Storage of livestock products	4
1	Measurement of extent of losses during storage and transport	4
1	Marketing of animal products	4
1	Quality standards for various livestock products	4
1	Environmental and legal issues in livestock products	4
4	Visit to different animal product manufacturing units	4
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Forrest, J. C. 1975. Principles of Meat Science. Freeman Publ.
2. Gracey. 1999. Thorntons Meat Hygiene. WB Saunders.
3. Mountney, G. J. Poultry Products Technology. 2<sup>nd</sup> Ed. AVI Publ.
4. Ockerman & Hansen. 2002. Animal Byproducts Processing and Utilization. CRC Publ.
5. Pearson, A. M. & Gillett, T. A. 1996. Processed Meat. 3<sup>rd</sup> Ed. Chapman & Hall.
6. Robertson, G. L. 1993. Food Packaging: Principles and Practices. Marcel Dekker.
7. Stadelman, W. & Cotterill, O. J. 2002. Eggs Science and Technology. 4<sup>th</sup> Ed. CBS.
8. Sukumar De. 1980. Outlines of Dairy Technology. Oxford Univ. Press.
9. Walstra, et al. 2006. Dairy Science and Technology. 2<sup>nd</sup> Ed. Taylor & Francis.
10. Yadav. 1993. Comprehensive Dairy Microbiology. Metropolitan Publ.

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**ABM 524 FRUIT PRODUCTION AND POST HARVEST MANAGEMENT****CREDITS: 2=1+1****THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	Horticulture production in World and India, present status of fruit industry in India and emerging scenario	3
1	Management of horticultural crops – establishment of an orchard, basic cultural practices	3
1	Regulation of flowering, fruiting and thinning	3
1	Protection against insect pest, diseases and weeds	3
1	Pre- and post harvest management for quality and shelf life	3
1	Post harvest management in horticulture- procurement management	3
1	Important aspects for marketing, standardization and quality control, packaging	4
1	Post harvest management in horticulture	3
1	Development of fruit-based carbonated drinks	3
1	Development of dehydrated products from some important fruits	3
2	Storage of pulp in pouches, essential oils from fruit waste, dehydrated fruits	6
2	Market structure and export potential of fruits	6
1	Problems in marketing of fruits and government policy	3
1	Quality standards of fruits for domestic and international trade	4
16	<b>Total</b>	<b>50</b>

## PRACTICAL

The practicals will impart knowledge regarding agro-techniques of fruit crops and their post harvest management.

No. of practical (s)	Name of the practical	Weightage
1	Study of planting systems of horticultural crops	3
1	Different methods of irrigation for horticultural crops	3
1	Methods for fertilizer application for horticultural crops	3
1	Use of plant growth regulators in fruit crops	3
1	Identification of different insect pest and diseases of fruit crops and their control	3
1	Maturity indices of fruit crops	3
1	Harvesting, grading and packing of horticultural crops	4
1	Marketing, standardization and quality control of horticultural crops	4
2	Preparation of fruit juices and carbonated juice	6
2	Preparation of dehydrated products from some important fruits	6
2	Visit to different markets	6
2	Project preparation for establishing commercial orchard	6
16	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Chadha, K. L. & Pareek, O. P. 1993. Advances in Horticulture. Vols. I-IV. Malhotra Publ. House.
2. Kader, A. A. 1992. Post-harvest Technology of Horticultural Crops. Univ. of California. Div. of Agri. & Natural Resources.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Various sources of farm power, their availability and utilization	3
1	Objective, importance and present status of mechanization	3
1	Level and scope of farm mechanization	3
1	Tractor and power tillage industry – model, make, capacity, production	3
1	Present status and future prospects of tractor and power tillage industry	3
1	Concept of zero tillage	3
1	Farm machinery selection for different size of farms	3
1	Farm machinery selection for different agro-climatic conditions	3
1	Scheduling of farm operations for higher efficiencies and indices of machine performance	3.5
1	Cost analysis of operations using different implements	3.5
1	Economic feasibility and performance of farm machines	3
1	Optimization of tractor implements system and transport of farm produce	4
1	Agricultural equipments production industry	3
1	Agricultural equipments- marketing and constraints	3
1	Establishment of agricultural engineering enterprises	3
1	Establishment of agro-service centers	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

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

No. of practical (s)	Name of the practical	Weightage
1	Study of different farm power and farm machinery	3
1	Study on model, make, capacity of farm power and farm machinery	3
1	Indices of machine performance	4
1	Agro-climatic conditions of farm	4
1	Cost analysis of operations using different implements	4
1	Cost analysis of operations using tractor	4
1	Economic feasibility of farm machines	4
1	Optimization of tractor implements	4
1	Optimization of transport of farm produce	4
1	Marketing of farm machinery	4
1	Establishment of agricultural engineering enterprises	4
1	Establishment of agro-service centers	4
4	Visit to different agro-service centers	4
16	<b>Total</b>	<b>50</b>

### SUGGESTED READINGS

1. Carville LA. 1980. Selecting Farm Machinery. Louisiana Coop. Extn. Service Publ.
2. FAO. 1984. Agricultural Engineering in Development: Selection of Mechanization. Agric. Service Bull.
3. Hunt, D. 1977. Farm Power and Machinery Management. Iowa State Univ. Press.
4. Waters, W. K. 1980. Farm Machinery Management Guide. Pennsylvania Agric. Extn. Service Spl. Circular No. 1992.

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**ABM 526 INTERNATIONAL TRADE AND SUSTAINABILITY GOVERNANCE****CREDITS: 2=2+0****THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	International trade – basic concepts	3
1	WTO and its implications for Indian economy in general	3
1	WTO and its implications for Indian agriculture sector in particular	4
1	TRIPS, TRIMS quotas, anti dumping duties	3
1	Quantitative and qualitative restrictions	3
1	Tariff and non-tariff measures	3
1	Trade liberalization, subsidies, green and red boxes	4
1	Issues for negotiations in future under WTO	4
1	CDMs trade	3
1	Carbon trade	3
1	Importance of foreign trade for developing economy	4
1	Foreign trade of foodgrains	3
1	Foreign trade of horticultural crop	3
1	Foreign trade of value added products	3
1	Foreign trade of fish, poultry and meat products	3
1	Foreign trade of dairy products	3
1	Absolute and comparative advantage	3
1	Foreign trade of India	3
1	Composition of India's foreign trade policy	3
1	India's balance of payments	3
1	Inter regional V/s international trade	3
1	Tariffs and trade control	3
1	Exchange rate; the foreign trade multiplier	3
1	Foreign demand, supply side analysis	3
1	Opportunity cost and trade	3
1	Factor prices, implications for developing countries	3
1	Market entry methods	3
1	Export procedures and documentations	3
1	Export standards for foodgrain crops	3
1	Export standards for horticultural crops	3
1	Export standards for value added products	3
1	Export standards for dairy and meat products	3
<b>32</b>	<b>Total</b>	<b>100</b>

## **SUGGESTED READINGS**

1. Chadha, G. K. 2003. WTO and Indian Economy. Deep & Deep. Economic Survey of India. Ministry of Finance, Govt. of India. (various issues)
2. HAU. 2003. Refresher Course on Technological Interventions to Face WTO Challenges. AAREM & HRD CCS HAU Hisar.
3. Indian Journal of Agricultural Economics
4. Vasisht, A. K. & Singh, Alka. 2003. WTO and New International Trade Regime- Implication for Indian Agriculture. Advance Publ. Concept.
5. Varkey, V. O 1998. International marketing.
6. Varma, M. M. 1998. Foreign Trade Management.
7. Douglas and Craig. Global Marketing Strategy.
8. Varshney and Bhattacharya. International Marketing Management.
9. Mannaur, H. G. International Economics.
10. Wahi, B. M. and Kalkunribar, A. B. International Trade and Export Management.
11. Rao and Rangachari. International Business.
12. Charles Hill. Global Business Today.

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**ABM 527 MANAGEMENT OF AGRIBUSINESS COOPERATIVES****CREDITS: 2=1+1****THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	Importance and principles of cooperation	2.5
1	Cooperative movement in India	2.5
1	Cooperative administration- a global perspective	2.5
1	Ecology of cooperative administration, cooperative sector and economic development	3
1	Cooperative management	2.5
1	Nature, functions and purpose of cooperatives	3
1	Procurement, storage, processing cooperatives	4
1	Marketing cooperative	3
1	Role of leadership in cooperative management	3
1	The state and cooperative movement	3.5
1	Effects of cooperative law in management	3
1	Long range planning for cooperative expansion, policy making	3
1	Human Resource Management (HRM)	3.5
1	HRM- Placement and role of board of directors in cooperative management	3
2	Overview of agribusiness cooperative- credit cooperatives, cooperative marketing, dairy cooperatives and financing agribusiness cooperative	8
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

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

No. of practical (s)	Name of the practical	Weightage
1	Cooperative credit structure in India, Study of cooperative movement in India	5
1	Visit and study of Primary Agricultural Cooperative CREDIT Society (PACCS)	4
1	Visit and study of District Central Cooperative Bank (DCCB)	4
2	Visit and study of processing cooperatives	4
2	Visit and study of marketing cooperatives	4
1	Preparation of loan proposal for crop production	4
1	Preparation of loan proposal for horticultural garden	4
1	Preparation of loan proposal for dairy enterprise	4
1	Preparation of loan proposal for poultry enterprise	4
2	Visit to different cooperative credit institutions	4
2	Visit to agribusiness cooperatives	5
1	Problems in cooperatives and remedies to overcome the same	4
16	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Akmat, J. S. 1978. New Dimensions of Cooperative Management. Himalaya Publ. House.
2. Ansari, A. A. 1990. Cooperative Management Patterns. Anmol Publ.
3. Sah, A. K. 1984. Professional Management for the Cooperatives. Vikas Publ. House.
4. Varkey, V. O. 1992. Marketing for Co-operative Banks.

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**THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	Importance, need and scope of financial management	3
3	Classification and credit, need in changing agriculture scenario- finance functions, investment financing	5
2	Balance sheet, income statement, cash flow statement for agribusiness	5
1	Financial planning and control – assessment of financial requirement of a agribusiness unit	5
1	Leverage – concept of leverage, financial and operating leverage; factor affecting capital structure, features of an optimal capital structure	4
1	Management of working capital – concept and components of working capital, need for working capital in agribusiness	4
1	Management of cash and accounts receivables and inventory for agribusiness	4
1	Capital budgeting - steps and concept of capital budgeting	4
2	Appraisal criteria – payback period, average rate of return, net present value, benefit-cost ratio and internal rate of returns	4
1	Agri-business financing system in India - functioning of cooperative credit institutions	4
1	Commercial banks, Regional Rural Banks, NABARD	4
1	Agro-Industries Corporation etc. in agribusiness financing	4
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practicals will expose the students to various aspects of financial management for agribusiness

No. of practical (s)	Name of the practical	Weightage
1	Study of classification of agricultural credit	4
3	Preparation of different financial statements for agri-busines (Balance Sheet, Cash flows, Income statement etc.)	7
1	Study of factors affecting capital structure of the agri-business	4
1	Study of management of working capital in agri-business	4
1	Examination of components of working capital in agri-business	4
1	Evaluation of working capital in selected agri-business units	4
1	Study of inventory in relation to cash and accounts	5
1	Study of capital budgeting in agri-business	5
2	Economic appraisal of selected agri-business units by applying various economic tests	5
4	Study of functioning of co-operative credit institutes and commercial banks	8
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Chandra, P. 2000. Financial Management. Tata McGraw Hill.
2. Khan, M. Y. & Jain, P. K. 2004. Management Accounting. Tata McGraw Hill.
3. Nelson, A. G & Murrey, W. G. 1988. Agricultural Finance. Kalyani Publ.
4. Pandey, I. M. 1997. Financial Management. Vikas Publ. House.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Introduction to international food market, India's competitive position in world food trade, foreign investment in global food industry	3
1	Retail management and food retailing, the nature of change in retailing, organized retailing in India	4
1	E-Retailing and understanding food preference of Indian consumer, food consumption and expenditure pattern	3
1	Demographic and psychographic factors affecting food pattern of Indian consumer	3
1	Value chain in food retailing, principal trends in food wholesaling and retailing, the changing nature of food stores	4
1	Various retailing formats, competition and pricing in food retailing, market implications of new retail developments	3
1	Value chain and value additions across the chain in food retail, food service marketing	3
1	4 P's in food retail management, brand management in retailing, merchandise pricing	3
1	Pricing strategies used in conventional and non-conventional food retailing	3
1	Public distribution system, promotion mix for food retailing	3
1	Management of sales promotion and publicity, advertisement strategies for food retailers	3
1	Managing retail operations, managing retailers' finances	3
1	Merchandise buying and handling, merchandise pricing, logistics, procurement of food products and handling, transportation of food products	3
1	Retail sales management, types of retail selling, salesperson selection, training, evaluation and monitoring	3
1	Customer relationship management, managing human resources in retailing	3
1	Legal and ethical issues in retailing	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practicals will assist students in understanding the structure and working of food marketing system in India, to examine how the system affects farmers, consumers and middlemen.

No. of practical (s)	Name of the practical	Weightage
2	Evaluation of retail management in agriculture sector	4
1	Study on food consumption and expenditure pattern and factors affecting the same	4
1	Examination of value chain in food retailing	4
1	Study of food wholesaling and retailing of selected products	4
2	Study of market implication of new food retail market chain for selected products	4
1	Examination of 4 P's in food retail management.	4
3	Study of brand management in retailing, merchandising and pricing strategies	6
1	Study of Public Distribution System (PDS)	4
1	Study of promotion mix for food retailing	4
1	Study of logistics in food marketing	4
1	Study of retail sale management	4
1	Study of managing human resources in retailing	4
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

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

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## THEORY

No. of lecture(s)	Topics	Weightage
2	Agricultural input marketing – meaning and importance - Management of distribution channels for agricultural input marketing	6
1	Agricultural Inputs and their types – farm and non-farm	3
1	Role of cooperative, public and private sectors in agri-input marketing	3
1	Seed- Importance of seed input; Types of seeds- hybrid, high yielding and quality seeds	4
1	Demand and supply of seeds- seed marketing channels, pricing, export import of seeds	3
1	Role of NSC and State Seed Corporation	3
1	Chemical fertilizers- production, export-import, supply of chemical fertilizers, demand/consumption	3
1	Chemical fertilizers-Prices and pricing policy, subsidy on fertilizers	3
1	Chemical fertilizers- marketing system, marketing channels, problems in distribution	3
1	Role of IFFCO and KRIBCO in fertilizer marketing	3
1	Plant Protection Chemicals- production, export/import, consumption, marketing system – marketing channels	3
1	Electricity/Diesel Oil- marketing and distribution system; pricing of electricity for agriculture use; subsidy on electricity	3
1	Farm Machinery- Production, supply, demand	3
1	Marketing and distribution channels of farm machines	4
1	Agro-industries Corporation and marketing of farm machines / implements/Equipments	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

Through these practicals, the students will expose to different marketing concept and marketing system in the context of agricultural inputs.

No. of practical (s)	Name of the practical	Weightage
1	Study of various inputs used in agricultural production	4
1	Study of functionaries involved in sale of various agricultural inputs and the study of channels of distribution	4
1	Role of co-operative, public and private sectors in agricultural input marketing	5
1	Study of marketing of various types of seed and institutions involved in marketing of seed	4
4	Estimation of demand, supply, pricing and export-import of seed	7
2	Evaluation of demand and supply for chemical fertilizers and their pricing policy	7
2	Study of marketing of fertilizers and role of IFFCO, KRIBCO etc. in fertilizer marketing in India	7
1	Estimation of production, demand, supply and export-import of plant protection chemicals in India	4
2	Study of demand, supply and marketing of farm machinery and electricity in India	4
1	Study of different corporations involved in marketing of agricultural inputs	4
<b>16</b>	<b>Total</b>	<b>50</b>

### SUGGESTED READINGS

1. Acharya, S. S & Agarwal, N. L. 2004. Agricultural Marketing in India. 4<sup>th</sup> Ed. Oxford & IBH.
2. Broadway, A. C. and Broadway, A. A. 2003. A Text Book of Agri-Business Management. Kalyani.
3. Singh, A. K. and Pandey, S. 2005. Rural Marketing. New Age.
4. Singh, S. 2004. Rural Marketing- Focus on Agricultural Inputs. Vikas Publ. House.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Present scenario of feed resources in India – requirement and availability	3
1	Present status of feed industry in India and the World and limitations in development of feed industry.	3
3	Requirement of nutrients for different categories of livestock and poultry	9
1	Feed stuff – definition, classification	3
1	Methods of storage of feed and fodder	3
1	Protection of protein and fat	3
2	Feed processing – Different methods of feed processing	7
1	Layout and design of feed production plant	3
1	Preparation of feeds for fish, pet animals, special feeds.	3
1	Importance and production of mineral mixture, feed additives and supplements for livestock and poultry	4
1	Principles involved in feed manufacturing, thumb rule and standards	3
1	Types of poor quality roughages and means to improve it	3
1	Regulations for the manufacture of feed, distribution and marketing	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

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

No. of practical (s)	Name of the practical	Weightage
4	Nutrient requirements for various categories of livestock viz; calf, heifer, milking, dry and pregnant animals, breeding bulls and bullocks	9
2	Nutrient requirement for poultry, pet animals and fish	8
2	Compounding of various types of feeds for livestock and poultry	8
2	Compounding of various types of feeds for pet animals and fish	8
3	Improvement of low quality roughages	8
3	Visit to feed factories	9
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Gohl, B. O. 1981. Tropical Feeds. FAO.
2. McEllihner, Robert R. 1994. Feed Manufacturing Technology. American Feed Industry Assoc.
3. Pfost Harry, B. 1976. Feed Manufacturing Technology. American Feed Industry Assoc.
4. Rajgopalan, K. Feed Industry Red Book. ZMAG Publication.
5. Rajgopalan, K. 1989. Storage Structures. Oxford & IBH.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Supply chain- changing business environment, SCM- present need, conceptual model of supply chain management	3
1	Evolution of SCM, SCM approach, traditional agri. supply chain management approach, modern supply chain management approach, elements in SCM	3
1	Demand management in supply chain- types of demand, demand planning and forecasting	4
1	Operations management in supply chain, basic principles of manufacturing management	3
1	Procurement management in agri. supply chain- purchasing cycle, types of purchases, contract/corporate farming	3
1	Classification of purchases of goods or services, traditional inventory management	3
1	Material requirements planning, Just in Time (JIT), Vendor Managed Inventory (VMI)	3
1	Logistics management- history and evolution of logistics	3
1	Elements of logistics, management, distribution management	4
1	Distribution strategies, pool distribution	3
1	Transportation management, fleet management, service innovation	3
1	Warehousing, packaging for logistics, Third-Party Logistics (TPL/3PL), GPS technology	3
1	Concept of information technology- IT application in SCM	3
1	Advanced planning and scheduling, SCM in electronic business	3
1	Role of knowledge in SCM, performance measurement and controls in agri supply chain management	3
1	Benchmarking- introduction, concept and forms of benchmarking	3
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The practicals will introduce the 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.

No. of practical (s)	Name of the practical	Weightage
1	Study of agri supply chain management in India	4
2	Study of traditional V/s modern agri supply chain management approach	5
2	Study of demand management, types of demand, demand planning and forecasting	5
1	Study of basic principles of manufacturing management	4
2	Study of procurement management in agri SCM	5
1	Study of types of purchases and classification of purchases of goods or services	4
2	Study of logistics management - A case study	5
2	Study of transportation management – A case study	5
1	Study of warehousing and packaging for logistics	4
1	Use of Information Technology application in agri-SCM	5
1	A case study of application of Information Technology in agri-SCM	4
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Altekar, R. V. 2006. Supply Chain Management: Concepts and Cases. Prentice Hall of India.
2. Monczka, R, Trent R. & 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.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Need, aim and objectives of veterinary hospital	2.5
1	Functioning and services provided at veterinary hospital	2.5
2	Designing and planning of ideal veterinary hospital viz; human resource, space, equipments, drugs, timing and service provided etc.	5
2	Information system and material management performance, equipment maintenance, condemnation, disposal, receipts, storage, purchase and distribution of material and scientific inventory control	5
2	Responsibilities of officer, authorities and accountability of management for optimizing the use of skill, developing and upgrading the skills and technology, efficient system of record keeping and accounting	5
1	Concept of quality and total quality management, quality control circle, statistical quality control and introduction to veterinary audit	5
2	Record maintenance, types and methodology, reports and reporting system, hospital information system for efficient controlling system and monitoring, need for financial resource, investment and working capital	5
1	General considerations- need based information system, applicability in surveillance and monitoring, planning and policy making cost control	5
1	Economic functions and quality control system, animal health economics	5
2	An introduction to need for financial resources (type and need)	5
1	Planning of investment and working capital, budgeting and cost cutting, legal aspects in the functioning of hospital	5
<b>16</b>	<b>Total</b>	<b>50</b>

## PRACTICAL

The objective of practicals for 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.

No. of practical (s)	Name of the practical	Weightage
1	Designing and planning of ideal veterinary hospital	3
2	Information system and material management	5
1	Concept of quality and total quality management	3
1	Statistical quality control and quality control circle	4
1	Methodology of report and reporting system	3
1	Hospital information system	3
1	Monitoring and surveillance of diseases	3
1	Planning and policymaking	3
1	Quality control systems and animal health economics	4
1	Study on cost control	3
1	Financial resources – type and need	3
1	Investment planning and working capital	4
1	Record keeping and inventory control	3
1	Accounting	3
1	Legal aspects in functioning of hospitals	3
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Chakavarti, Amelendu. 2007. A Textbook of Preventive Veterinary Medicine. Kalyani Publications, 4<sup>th</sup> Edition.
2. Singh, S. and Singh, N. 1994. Current Advances in Veterinary Sciences and Animal Production in India.
3. Losos, G. S. 1980. Infectious Tropical disease of Domestic Animals. Longman, London.
4. Blood, D. C. et al. 1983. Veterinary Medicine. 6<sup>th</sup> Edn. The English Language Book Society.
5. Chakavarti, Amelendu. 1998. A Textbook of Clinical Veterinary Medicine. Kalyani Publications, 2<sup>nd</sup> Edition.

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ABM 534

**POULTRY AND HATCHERY MANAGEMENT**

**CREDITS: 2=1+1**

**THEORY**

<b>No. of lecture(s)</b>	<b>Topics</b>	<b>Weightage</b>
1	Introduction, present scenario of poultry industry, hatchery enterprises and poultry products and marketing in India	3
1	Role of poultry industry and hatchery industry in India	3
1	Role of management in poultry and hatchery industry	3
2	Planning and establishment of poultry and hatchery unit viz; location, size, construction of farm, hatchery equipments, physical facilities, organizing and managing of poultry and hatchery	5
1	Production of hatching eggs – management of breeding stock, handling of hatching eggs	3
1	Incubation and hatching, production of quality chicks and factors affecting hatchability, hatchery sanitation and bio-securities	3
2	Production of quality day old chicks- grading, sexing, packing, dispatch, transportation and chicks delivery	3
1	Hatcheries viz; franchise and costume, brooding, growing and laying management, crisis management, health management	3
1	Industrial breeding management, feeding, housing and disease management	4
1	Waste product management, record management, cost accounting and budgetary control	4
1	Risk and insurance for poultry and hatchery industry	4
1	Personal management viz; labour relations including wages and salaries, job evaluation and employee appraisal	4
1	Marketing management- direct sale and sale through franchise agents,	4
1	Advertisement, sales and after sales services, other innovative sale strategies	4
16	<b>Total</b>	<b>50</b>

## PRACTICAL

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

No. of practical (s)	Name of the practical	Weightage
1	Planning and establishment of poultry unit	3
1	Planning and establishment of hatchery unit	3
1	Production of poultry – brooder, grower and layer management	4
1	Production management of breeder flock	4
1	Production of hatching eggs	3
1	Handling of hatching eggs	3
1	Incubation and hatching of fertile eggs	3
1	Production of quality chicks	3
1	Grading, sexing and packing of day old chicks	3
1	Dispatch and transportation of chicks	3
1	Feeding, housing and disease management	3
1	Waste product management	3
1	Risk and insurance for poultry and hatchery industry	3
1	Record keeping, accounting and budgetary control	3
1	Marketing strategies	3
1	Visit to modern hatchery unit	3
<b>16</b>	<b>Total</b>	<b>50</b>

## SUGGESTED READINGS

1. Mahapatra. Poultry production.
2. Panda and Mahapatra. Poultry Production.
3. Indian Farming Special Issue, Sept. 1996 (20<sup>th</sup> World Poultry Congress- New Delhi)
4. Mack, O. North. Commercial Chicken Production Manual.
5. Cord, L. E. and Nesheim, M. C. Poultry Production.

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## THEORY

No. of lecture(s)	Topics	Weightage
1	Introduction, importance and scope of floriculture industry	5
1	Recent advances in floriculture industry	5
2	Evolution of new cultivars, production technology of ornamental plants	5
1	Special techniques for forcing of flower production for export	5
1	Drying and dehydration of flowers, response of flowers to environmental conditions	5
1	Importance and scope of landscape gardening	5
2	Style of gardening, anesthetic and socio-aesthetic planning of old and newly developed towns and cities	5
4	Commercial cultivation of flower crops (rose, jasmine gladiolus, tuberose, marigold, aster, carnation, gerbera, cilium chrysanthemum) use of plant regulators in flower production	5
1	Extraction, purification and storage of essential oils and perfumes	5
2	Post harvest changes in cut flowers, storage and packing of cut flowers; determining optimum time of harvesting of flowers for export and home use	5
16	<b>Total</b>	<b>50</b>

## PRACTICAL

The practicals will expose the students to floriculture technology and its Agribusiness implications including international trade.

No. of practical (s)	Name of the practical	Weightage
6	Study of different cultivars of flower crops i.e. Roses, Jasmin, Gladiolus, Tuberose, Marigold, Aster, Carnation, Gerbera, Chrysanthemum	10
1	Use of plant growth regulators in flower production	6
1	Studies on drying and dehydration of flowers	5
1	Studies of different types of garden	6
1	Studies on keeping quality of cut-flowers	5
2	Harvesting, grading and packaging of cut flowers	6
2	Visits to flower market for export and domestic use	6
2	Project report on landscaping/flower production/marketing	6
<b>16</b>	<b>Total</b>	<b>50</b>

### SUGGESTED READINGS

1. Chadha, K. L & Choudhary, B. Ornamental Horticulture in India. ICAR.
2. Grindal, E. W. Every Day Gardening in India. D.B. Tarporevala Sons.
3. Randhawa, G. S & Mukhopadhyay, A. Floriculture in India. Allied Publ.
4. Randhawa, M. S. Beautifying India. Raj Kamal Publ.

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# AGRI-BUSINESS MANAGEMENT

## List of Journals

1. Agribusiness – An International Journal
2. Decision
3. Harvard Business Review
4. Indian Cooperative Review
5. Indian Journal of Finance
6. Indian Management
7. Indian Management Studies Journal
8. Journal of Agri-business
9. Journal of Marketing Management
10. Journal of Marketing Research
11. Journal of Sales Management
12. Management Review
13. Prabandhan
14. Vikalpa
15. Yojana
16. Hindu Survey of Indian Agriculture (Yearly)
17. Trade Year Books, FAO Publication.
18. American Journal of Agricultural Economics
19. Agricultural Economics Research Review, New Delhi
20. Journal of Maharashtra Agricultural Universities, Pune
21. Agricultural Marketing (ISSN: 0002-1555)  
Controller of Publication,  
Department of Publications, Ministry of Urban Affairs & Employment  
Civil Lines, Delhi-100 054
22. Agricultural News  
National Academy of Agricultural Sciences  
Office Block, NASC Complex, DPS Marg, Pusa, New Delhi-110 012  
E mail: [naas@vsnl.com](mailto:naas@vsnl.com)  
Web: [www.education.vsnl.com/naas](http://www.education.vsnl.com/naas)

23. Agricultural Reviews (ISSN 0253-1496)  
Agricultural Research Communication Centre  
1130, Sadar Bazar, Near P.O. Karnal-132 001  
E mail: [arccgoel@yahoo.co.in](mailto:arccgoel@yahoo.co.in)
24. Agricultural Situation in India (ISSN 0002-1679)  
Directorate of Economics and Statistics  
Department of Agriculture and Co-operation  
Ministry of Agriculture, Government of India  
C-1 Hutments, Dalhausie Road, New Delhi-1
25. Agriculture Today  
502 Rohit House, Tolstoy Road, New Delhi-110 001  
Phone: 011-23731128-29  
Fax: 011-23731130  
E mail: [editor@agriculturetoday.org](mailto:editor@agriculturetoday.org), [business@agriculturetoday.org](mailto:business@agriculturetoday.org)
26. Bharatiya Sugar  
7, Chinar Apartment, Near College of Agriculture,  
Shivajinagar, Pune-411 005  
E mail: [info@bharatiya-sugar.com](mailto:info@bharatiya-sugar.com)  
Web: [www.bharatiya-sugar.com](http://www.bharatiya-sugar.com)
27. Cooperative Sugar (ISSN 0971-877x)  
National Federation of Co-operative Sugar Factories Ltd  
Ansaf Plaza, Block-C, 2<sup>nd</sup> Floor, August Kranti Marg, New Delhi-110 049  
E mail: [nfcsf@ndb.vsnl.net.in](mailto:nfcsf@ndb.vsnl.net.in) [ufcsf@spectranet.com](mailto:ufcsf@spectranet.com)  
Web: [www.coopsugar.org](http://www.coopsugar.org)
28. Economic and Political Weekly  
Hitkari House, 284 Shahid Bhagatsingh Road, Mumbai-400 001  
E mail: [Mumbai@gmail.com](mailto:Mumbai@gmail.com); [edit@epw.org.in](mailto:edit@epw.org.in)  
Web : <http://www.epw.org.in>
29. FAI Abstracts Service (ISSN 0014-5564)  
Fertilizer Association of India,  
10 Shaheed Jit Singh Marg, New Delhi-110 067  
E mail: [lib@faidelhi.org](mailto:lib@faidelhi.org)  
Web: [www.faidelhi.org](http://www.faidelhi.org)

30. Financing Agriculture (ISSN 0015-2110)  
Agricultural Finance Corporation Ltd.,  
Dhanraj Mahal ,1<sup>st</sup> Floor, Chhatrapati Shivaji Maharaj Marg, Mumbai-400 001  
E mail: [afcl@vsnl.com](mailto:afcl@vsnl.com)
31. Indian Economic Journal (ISSN 0019-4662)  
Managing Editor,  
Indian Economic Journal,  
No.9 or 12, Kalappa Block, Basavanagudi, Bangalore-560 004  
E mail: [vani@blr.vsnl.netin](mailto:vani@blr.vsnl.netin)  
Web: [www.indianeconomics.org](http://www.indianeconomics.org)
32. Indian Economic Review (ISSN 0019-4670)  
Managing Editor,  
Indian Economic Review,  
Delhi School of Economics, University of Delhi, New Delhi-110 006
33. Indian Farming (ISSN 0019-4786)  
Business Manager,  
DIPA, ICAR, KRISHI Anusandhan Bhavan 1, Pusa New Delhi-110 012  
Email: [bmicar@icar.org.in](mailto:bmicar@icar.org.in)
34. Indian Journal of Agricultural Economics (ISSN: 0019-5014)  
Editor, 46-4, Esplanade Mansions  
Mahatma Gandhi Road, Fort, Mumbai-400 001  
E mail: [isae@bom7vsnl.net.in](mailto:isae@bom7vsnl.net.in)  
Web: [www.isaeindia.org](http://www.isaeindia.org)
35. Indian Journal of Agricultural Marketing (ISSN 0971-8664)  
Secretary and Managing Editor, Indian Society of Agricultural Marketing  
112-A, Rachana Vishwa, K.T. Magar, Katol Road, Nagpur-440 013  
E mail: [tsatyanarayana@dataone.in](mailto:tsatyanarayana@dataone.in)
36. Indian Journal of Economics (ISSN 0019-5170)  
Departments of Economics and Commerce  
University of Allahabad, Post Box No.2005, Allahabad 211 002
37. Indian Journal of Marketing (ISSN 0019-5319)  
Y-21, Hauz Khas, New Delhi-110 016  
E mail: [editor@indianjournalofmarketing.com](mailto:editor@indianjournalofmarketing.com)  
Web: <http://www.indianjournalofmarketing.com>

38. Indian Sugar (ISSN 0019-6428)  
Indian Sugar Mills Association  
Sugar House, 39, Nehru Place, New Delhi-110 019  
E mail: [isma@vsnl.com](mailto:isma@vsnl.com), [isma@indiansugar.com](mailto:isma@indiansugar.com)  
Web: <http://www.indiansugar.com>
39. Kheti (ISSN 0023-1088)  
Business Manager  
ICAR, Krishi Anusandhan Bhavan  
Pusa Gate, New Delhi-110 012  
E mail: [bmicar@icar.org.in](mailto:bmicar@icar.org.in)
40. Kisan World (ISSN 0971-9229)  
Old No.101 (New No.72)  
Mount Road, Guindy, Chennai-600 032  
E mail: [kisanworld@sakthisugars.com](mailto:kisanworld@sakthisugars.com)  
Web: <http://www.sakthisugars.com>
41. Krishi Chayanika  
Business Manager,  
ICAR, Krishi Anusandhan Bhavan, Pusa Gate, New Delhi-110 012  
E mail: [bmicar@icar.org.in](mailto:bmicar@icar.org.in)
42. Kurukshetra: Journal of Rural Development  
Business Manager,  
East Block-IV Level-VII, R.K.Puram, New Delhi-110 066  
E mail: [kurupage@yahoo.co.in](mailto:kurupage@yahoo.co.in)  
Web: [www.publicationsdivision.nic.in](http://www.publicationsdivision.nic.in)
43. Monthly Commentary on Indian Economic Conditions  
Indian Institute of Public Opinion Pvt. Ltd.,  
2, Jeevan Tara Building, Sansad Marg., P.O.Box No.288, New Delhi-110 001  
E mail: [iipo@del3.vsnl.net.in](mailto:iipo@del3.vsnl.net.in)
42. New Agriculturists (ISSN 0971 -0647)  
Chief Editor,  
New Agriculturist, 103/42, M.L.N. Road, Allahabad-211 002 (UP)
44. RBI Bulletin  
Assistant Adviser  
Sales Promotion, DRRP, DEAP  
Reserve Bank of India, City Ice Building 2<sup>nd</sup> Floor  
Perin Nariman Street, Mumbai-400 001  
Web: <http://www.rbi.org.in>



45. Thesis Abstracts (ISSN 0379-3990)  
 Directorate of Extension Education  
 CCS Haryana Agricultural University, Hisar-125 004
46. Times Agricultural Journal  
 World Wide Media,  
 Times of India Building, Dr. Dadabhai Naoroji Road, Mumbai-400 001  
 E mail: [int.times@timesgroup.com](mailto:int.times@timesgroup.com)
47. Annuals of Library and Information Studies (ISSN: 0972-5423)  
 NISCAIR (CSIR), 14, Satsang Vihar Marg, New Delhi-110 067  
 E mail: [annals@niscair.res.in](mailto:annals@niscair.res.in)
48. Journal of Library and Information Science (ISSN 0970-714x)  
 Department of Library and Information Science  
 Tutorial Building, University of Delhi, Delhi-110 007  
 E mail: [jlis@libinfosci.du.ac.in](mailto:jlis@libinfosci.du.ac.in)

### **e- Resources**

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

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## **COMPULSORY NON-CREDIT COURSES (NCCC)**

(Compulsory for Master's programme in all disciplines; Optional for Ph.D. scholars)

### **CODE COURSE TITLE CREDITS**

PGS 501	LIBRARY AND INFORMATION SERVICES	0+1
PGS 502	TECHNICAL WRITING AND COMMUNICATIONS SKILLS	0+1
PGS 503	INTELLECTUAL PROPERTY AND ITS MANAGEMENT IN AGRICULTURE (e-Course)	1+0
PGS 504	BASIC CONCEPTS IN LABORATORY TECHNIQUES	0+1
PGS 505	AGRICULTURAL RESEARCH, RESEARCH ETHICS AND RURAL DEVELOPMENT PROGRAMMES (e-Course)	1+0
PGS 506	DISASTER MANAGEMENT (e-Course)	1+0

### **Course Contents**

#### **PGS 501 LIBRARY AND INFORMATION SERVICES**

**CREDIT: 1=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.

#### **SUGGESTED READINGS**

1. Sharma, C. D. Use of Library.
2. Deshmukh, P. P. Information Systems for Agricultural Services and Technology.
3. Kumar, Krishna. Reference Service.
4. Chhotey, L. Information Management in Scientific Libraries.

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## **PGS 502      TECHNICAL WRITING AND COMMUNICATIONS SKILLS**

**CREDIT: 1=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)

### **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**

1. *Chicago Manual of Style*. 14<sup>th</sup> Ed. 1996. Prentice Hall of India.
2. *Collins' Cobuild English Dictionary*. 1995. Harper Collins.
3. Gordon, H. M. & Walter, J. A. 1970. *Technical Writing*. 3<sup>rd</sup> Ed. Holt, Rinehart & Winston.
4. Hornby, A. S. 2000. *Comp. Oxford Advanced Learner's Dictionary of Current English*. 6<sup>th</sup> Ed. Oxford University Press.
5. James, H. S. 1994. *Handbook for Technical Writing*. NTC Business Books.
6. Joseph, G. 2000. *MLA Handbook for Writers of Research Papers*. 5<sup>th</sup> Ed. Affiliated East-West Press.
7. Mohan, K. 2005. *Speaking English Effectively*. MacMillan India.
8. Richard, W. S. 1969. *Technical Writing*. Barnes & Noble.
9. Robert, C. 2005. *Spoken English: Flourish Your Language*. Abhishek.
10. Sethi, J. & Dhamija, P. V. 2004. *Course in Phonetics and Spoken English*. 2<sup>nd</sup> Ed. Prentice Hall of India.
11. Wren, P. C & Martin, H. 2006. *High School English Grammar and Composition*. S. Chand & Co.

**PGS 503 INTELLECTUAL PROPERTY AND ITS MANAGEMENT IN  
AGRICULTURE (e-Course)**

**CREDIT: 1=1+0**

**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**

1. Erbisch, F. H & Maredia, K.1998. *Intellectual Property Rights in Agricultural Biotechnology*. CABI.
2. Ganguli, P. 2001. *Intellectual Property Rights: Unleashing Knowledge Economy*. McGraw-Hill.
3. *Intellectual Property Rights: Key to New Wealth Generation*. 2001. NRDC & Aesthetic Technologies.
4. Ministry of Agriculture, Government of India. 2004. *State of Indian Farmer*. Vol. V. *Technology Generation and IPR Issues*. Academic Foundation.
5. Rothschild, M & Scott, N. 2003. *Intellectual Property Rights in Animal Breeding and Genetics*. CABI.
6. Saha, R. 2006. *Intellectual Property Rights in NAM and Other Developing Countries: A Compendium on Law and Policies*. Daya Publ. House.
7. *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.*

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**CREDIT: 1=0+1****OBJECTIVE**

To acquaint the students about the basics of commonly used techniques in laboratory.

**PRACTICAL**

Safety measures while in Lab; Handling of chemical substances; Use of burettes, pipettes, measuring cylinders, flasks, separatory funnel, condensers, micropipettes and vaccumets; washing, drying and sterilization of glassware; Drying of solvents/chemicals. Weighing and preparation of solutions of different strengths and their dilution; Handling techniques of solutions; Preparation of different agro-chemical doses in field and pot applications; Preparation of solutions of acids; Neutralisation of acid and bases; Preparation of buffers of different strengths and pH values. Use and handling of microscope, laminar flow, vacuum pumps, viscometer, thermometer, magnetic stirrer, micro-ovens, incubators, sandbath, waterbath, oilbath; Electric wiring and earthing. Preparation of media and methods of sterilization; Seed viability testing, testing of pollen viability; Tissue culture of crop plants; Description of flowering plants in botanical terms in relation to taxonomy

**SUGGESTED READINGS**

1. Furr, A. K. 2000. *CRC Hand Book of Laboratory Safety*. CRC Press.
2. Gabb, M. H & Latchem, W. E. 1968. *A Handbook of Laboratory Solutions*. Chemical Publ. Co.

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**PGS 505      AGRICULTURAL RESEARCH, RESEARCH ETHICS  
AND RURAL DEVELOPMENT PROGRAMMES (e-Course)**

**CREDIT: 1=1+0**

**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**

1. Bhalla, G. S & Singh, G. 2001. *Indian Agriculture - Four Decades of Development*. Sage Publ.
2. Punia, M. S. *Manual on International Research and Research Ethics*. CCS, Haryana Agricultural University, Hisar.
3. Rao, B. S. V. 2007. *Rural Development Strategies and Role of Institutions - Issues, Innovations and Initiatives*. Mittal Publ.
4. Singh, K. 1998. *Rural Development - Principles, Policies and Management*. Sage Publ.

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**OBJECTIVE**

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

**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**

1. Gupta, H. K. 2003. *Disaster Management*. Indian National Science Academy. Orient Blackswan.
2. Hodgkinson, P.E & Stewart, M. 1991. *Coping with Catastrophe: A Handbook of Disaster Management*. Routledge.
3. Sharma, V. K. 2001. *Disaster Management*. National Centre for Disaster Management, India.

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