Revised Syllabi
of
B.B.A. (Agri.)
(Bachelor of Business Administration-Agriculture)

MPKV, RAHURI
2008 - 09
## CONTENTS

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<th>Sr. No.</th>
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<td>Departmentwise courses</td>
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<td>Semesterwise courses layout</td>
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### I. Departmentwise courses of B.B.M. (Agri.)

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### Department of Agricultural Marketing

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**Total 31=18+13**

### Compulsory Module*
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* Ten credits to be completed from any one module.

** Ten credits to be completed by combing different optional courses.
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Total 22=13+09

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**Optional Module**

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MKT-4714 Demand Forecasting, Price Analysis and Future Trading. 3=0+3
MKT-4715 Supply Chain Management (SCM) 3=0+3
MKT-4716 Retail Management of Agricultural Products 2=0+2
MKT-4717 Marketing of Aromatic, Medicinal Plants and Spices. 2=0+2
MKT-4718 Management of Kiosks 2=0+2
MKT-4719 Marketing of Organically Produced Commodities 2=0+2
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**Compulsory Module**

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**Optional Module**

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<td>Group Sale Management</td>
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<td>Contract Farming Management</td>
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<td>Natural Resources, Economics and Market Management</td>
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### III. Total credits and courses offered in various subjects during odd and even semesters for BBM. Agri.)

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<td>Horticulture</td>
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V. Semesterwise courses layout of B.B.M. (Agri.)

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<td>Principles of Plant Biotechnology</td>
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<td>Agricultural Economics and Natural Resource Economics</td>
<td>3=2+1</td>
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<td>Structure and Dynamics of Indian Agriculture</td>
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<td>Introduction to Agri-Business Management</td>
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<td>ABM-123</td>
<td>Entrepreneurship and Personality Development</td>
<td>2=2+0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>20=12+8</strong></td>
</tr>
</tbody>
</table>
### Semester-III

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Title of Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HORT-232</td>
<td>Production Management of Vegetable and Floricultural Crops</td>
<td>2=1+1</td>
</tr>
<tr>
<td>SSAC-232</td>
<td>Soil, Water and Plant Analysis</td>
<td>2=0+2</td>
</tr>
<tr>
<td>ASDS-231</td>
<td>Animal Production Management</td>
<td>2=1+1</td>
</tr>
<tr>
<td>IWM-231</td>
<td>Irrigation Water Management</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ENGG-232</td>
<td>Post-Harvest Technology of Cereals, Pulses and Oilseeds</td>
<td>2=1+1</td>
</tr>
<tr>
<td>PATH-231</td>
<td>Integrated Disease Management</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ECON-235</td>
<td>Agricultural Co-operation, Institutions and Management</td>
<td>3=2+1</td>
</tr>
<tr>
<td>MKT-232</td>
<td>Marketing Institutions and Organizations</td>
<td>3=2+1</td>
</tr>
<tr>
<td>ABM-234</td>
<td>Communication Skill for Business Management</td>
<td>2=1+1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>20 = 10 + 10</strong></td>
</tr>
</tbody>
</table>

### Semester – IV

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Title of Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HORT-243</td>
<td>Post Harvest Technology of Horticultural Crops</td>
<td>3=2+1</td>
</tr>
<tr>
<td>ASDS-242</td>
<td>Value Addition in Animal Products</td>
<td>2=1+1</td>
</tr>
<tr>
<td>STAT-241</td>
<td>Business Statistics</td>
<td>3=2+1</td>
</tr>
<tr>
<td>ECON-246</td>
<td>Scientific Methods in Report Writing</td>
<td>2=1+1</td>
</tr>
<tr>
<td>MKT-243</td>
<td>Input Marketing Management</td>
<td>3=2+1</td>
</tr>
<tr>
<td>MKT-244</td>
<td>Rural Marketing and Market Infrastructure</td>
<td>3=2+1</td>
</tr>
<tr>
<td>MKT-245</td>
<td>Consumer Behaviour</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ABM-245</td>
<td>Agri-Business Operations, HRD and Strategic Management</td>
<td>2=2+0</td>
</tr>
<tr>
<td>ABM-246</td>
<td>Information Technology in Agri-Business</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ABM-247</td>
<td>Office Procedures for Agri-Business</td>
<td>1=0+1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>23 = 14 + 9</strong></td>
</tr>
</tbody>
</table>
### Semester –V

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Title of Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON-357</td>
<td>Indian Agriculture Policies</td>
<td>2=2+0</td>
</tr>
<tr>
<td>ECON-358</td>
<td>Input-Output Measurement Techniques</td>
<td>2=1+1</td>
</tr>
<tr>
<td>MKT-356</td>
<td>Retail Marketing</td>
<td>3=2+1</td>
</tr>
<tr>
<td>MKT-357</td>
<td>Trading of Agricultural Commodities-I</td>
<td>2=1+1</td>
</tr>
<tr>
<td>MKT-358</td>
<td>Market and Trade Acts</td>
<td>2=2+0</td>
</tr>
<tr>
<td>ABM-358</td>
<td>Inventory and Risk Management</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ABM-359</td>
<td>Agro-Tourism</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ABM-3510</td>
<td>Production Management, Planning and Control</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ABM-3511</td>
<td>Agro-Processing Management</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ABM-3512</td>
<td>Marketing Management and Policies</td>
<td>2=1+1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>21 = 13 +8</strong></td>
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</table>

### Semester-VI

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Title of Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATH-362</td>
<td>Bio-fertilizers and Mushroom Production</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ECON-369</td>
<td>Planning, Formulation and Evaluation of Business Projects</td>
<td>3=1+2</td>
</tr>
<tr>
<td>ECON-3610</td>
<td>Financial Management in Agri-Business</td>
<td>3=2+1</td>
</tr>
<tr>
<td>MKT-369</td>
<td>Trading of Agricultural Commodities-II</td>
<td>2=1+1</td>
</tr>
<tr>
<td>MKT-3610</td>
<td>Market-Led Extension</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ABM-3613</td>
<td>Product Promotion Methods</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ABM-3614</td>
<td>Organizational Behaviour</td>
<td>2=2+0</td>
</tr>
<tr>
<td>ABM-3615</td>
<td>Managerial Accounting</td>
<td>2=1+1</td>
</tr>
<tr>
<td>ABM-3616</td>
<td>Market Survey and Price Analysis</td>
<td>2=0+2</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>20=10+10</strong></td>
</tr>
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### Semester-VII


<table>
<thead>
<tr>
<th>Course No.</th>
<th>Activity</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td></td>
<td><strong>Experiential Learning (A+B)</strong></td>
<td>20=0+20</td>
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<tr>
<td>A</td>
<td><strong>Compulsory Module</strong></td>
<td>10=0+10</td>
</tr>
<tr>
<td>MKT-4711</td>
<td>Marketing of Agricultural Products</td>
<td>10=0+10</td>
</tr>
<tr>
<td>MKT-4712</td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>MKT-4712</td>
<td>Marketing of Agricultural Inputs</td>
<td>10=0+10</td>
</tr>
<tr>
<td>ABM-4717</td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>ABM-4717</td>
<td>Production and Marketing of Crops Produced under Protected Cultivation</td>
<td>10=0+10</td>
</tr>
<tr>
<td>ABM-4718</td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>ABM-4718</td>
<td>Commercial Production of Livestock Units</td>
<td>10=0+10</td>
</tr>
<tr>
<td>ABM-4719</td>
<td>OR</td>
<td></td>
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<tr>
<td>ABM-4719</td>
<td>Processing and Value Addition of Fruits and Vegetables</td>
<td>10=0+10</td>
</tr>
<tr>
<td>ABM-4720</td>
<td>OR</td>
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<tr>
<td>ABM-4720</td>
<td>Commercial Production of Seed</td>
<td>10=0+10</td>
</tr>
<tr>
<td>ABM-4721</td>
<td>OR</td>
<td></td>
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<tr>
<td>ABM-4721</td>
<td>Commercial Management of Nursery</td>
<td>10=0+10</td>
</tr>
<tr>
<td>ABM-4722</td>
<td>OR</td>
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<tr>
<td>ABM-4722</td>
<td>Extension Techniques for Transfer of Technology</td>
<td>10=0+10</td>
</tr>
<tr>
<td>ABM-4723</td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>ABM-4723</td>
<td>Study and Management of Agrotourism Centres</td>
<td>10=0+10</td>
</tr>
<tr>
<td>B</td>
<td><strong>Optional Courses</strong></td>
<td>10=0+10</td>
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<tr>
<td>MKT-4713</td>
<td>Agricultural Export Procedure and EXIM Polices</td>
<td>3=0+3</td>
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<tr>
<td>MKT-4714</td>
<td>Demand Forecasting, Price Analysis and Future Trading.</td>
<td>3=0+3</td>
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<tr>
<td>MKT-4715</td>
<td>Supply Chain Management (SCM)</td>
<td>3=0+3</td>
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<tr>
<td>MKT-4716</td>
<td>Retail Management of Agricultural Products</td>
<td>2=0+2</td>
</tr>
<tr>
<td>MKT-4717</td>
<td>Marketing of Aromatic, Medicinal Plants and Spices.</td>
<td>2=0+2</td>
</tr>
<tr>
<td>MKT-4718</td>
<td>Management of Kiosks</td>
<td>2=0+2</td>
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<tr>
<td>MKT-4719</td>
<td>Marketing of Organically Produced Commodities</td>
<td>2=0+2</td>
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<tr>
<td>ABM-4724</td>
<td>Management of Agro-Service Centres</td>
<td>3=0+3</td>
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<tr>
<td>ABM-4725</td>
<td>Agricultural Finance Proposals and Management</td>
<td>2=0+2</td>
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<tr>
<td>ABM-4726</td>
<td>Group Sale Management</td>
<td>2=0+2</td>
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<tr>
<td>ABM-4727</td>
<td>Contract Farming Management</td>
<td>2=0+2</td>
</tr>
<tr>
<td>ABM-4728</td>
<td>Natural Resources, Economics and Market Management</td>
<td>2=0+2</td>
</tr>
<tr>
<td>ABM-4729</td>
<td>Project Formulation, Evaluation and Monitoring</td>
<td>2=0+2</td>
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<tr>
<td>EXTN-472</td>
<td>Agricultural Journalism</td>
<td>3=0+3</td>
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## Semester-VIII

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Credits</th>
<th>Weeks</th>
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<tbody>
<tr>
<td></td>
<td><strong>In-plant Training</strong></td>
<td>20=0+20</td>
<td>22</td>
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<tr>
<td>1</td>
<td>Orientation</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Production Unit</td>
<td>4=0+4</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Processing Units</td>
<td>4=0+4</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Marketing Units</td>
<td>7=0+7</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>Study Tour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Report Writing and Evaluation</td>
<td>5=0+5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>20=0+20</td>
<td>22</td>
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<tr>
<td></td>
<td><strong>Grand Total</strong></td>
<td>160=70+90</td>
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</tbody>
</table>

* Credits for NC courses are not included in the total.

### VI. Details of courses content (Semesterwise)

**SEMESTER - I**
Course No. : AGRO-111
Title : Agro-Techniques of Principal Crops and Agro-Meteorology
Credit : 3=2+1

THEORY

Crop Production: Definition, Scope, limitations and strategies. Basic elements of crop production and factors affecting crop production. Food production, food security, area, production and productivity of foodgrains in India. Classification of field crops. Seeds and sowing, intercultivation, etc., Economic importance, market value (export, import), climate, nutrient and irrigation management, interculturing practices, weed management, major pest and diseases, use of growth regulators. Cropping systems, intercropping and crop rotation. Maturity, harvesting, threshing, processing, yield packing, storage and marketing. All these production parameters for crops viz, jowar, paddy, maize, wheat, bajra, arhar, gram, green gram, black gram, pea, cowpea, groundnut, soybean, sunflower, safflower, rapeseed, mustard, linseed, sesamum, castor, sugarcane, potato, tomato, cotton, jute etc.

drought. Forecasting, types of weather, forecasting, basics and their importance. Remote sensing, role of remote sensing in agriculture. Crop modelling, its types and application.

**PRACTICALS**


**Reference Books**


---

**Course No.** : HORT-111  
**Title** : Production Management of Fruit Crops  
**Credit** : 2=1+1

**THEORY**

Horticultural basis for classification of tropical, sub-tropical, temperate and arid zone fruits. Importance, present status and future scope for fruit growing in Maharashtra and India. Area and production, export, import of fruit crops and plantation crops in Maharashtra and India. Nutritive value of fruits, importance of wind breaks and shelter-belts in fruit production. Nutrition and water requirement of fruit crops, climate, soil, varieties, layout, planting,
nutrient management, water management, weed control mulching, intercropping, use of growth regulators, other special horticultural practices, methods, stage of harvesting and post harvest handling of mango, banana, citrus, grape, papaya, pineapple, sapota, guava, pomegranate, ber, fig, anola, jamun, tamarind, jackfruit, kokum, karanda, phalsa, passionfruit, annona, litchi, wood apple, charoli, avocado, bael, apple, peach, pear, almond, walnut, strawberry, sweet cherry etc. cashewnut, coconut, arecanut, tea, coffee, cocoa, rubber, date palm, oil palm, betelvine etc. Industrial value of plantation crops. (Give brief cultivation information in tabular form for minor crops)

**PRACTICALS**

1. Identification of fruit and plantation crops and their varieties.
2. Special horticultural practices like bahar treatment, ringing, girdling, bending, notching, etc.
3. Practices in planning and planting systems of fruit plants.
4. Training and pruning, manures and fertilizers application, irrigation methods.
5. Study of flowering and fruiting habits.
6. Preparation and application of growth regulators.
7. Preparation and application of Bordeaux solution and paste.
8. Identification of important pests and diseases of fruit crops and their control.
10. Nursery practices for raising of seedlings
11. Visit to commercial orchards.
12. Working out the economics of important fruit crops.

**Reference Books**


**Course No.** : BOT-111  
**Title** : Principles of Plant Biotechnology  
**Credit** : 2=1+1
THEORY

Concepts of Plant Biotechnology: History of plant tissue culture and plant genetic engineering, Scope and importance in crop improvement, Totipotency and Morphogenesis, Techniques of in- vitro cultures, Nutritional requirements of in- vitro cultures, Micropropagation, anther culture, pollen culture, ovule culture, embryo culture, test tube fertilization, endosperm culture, factors affecting in-vitro culture techniques, applications and achievements, Somaclonal variations, types, reasons: Somatic embryogenesis and synthetic seed production technology, somatic hybridisation and its applications in crop improvement.


PRACTICALS

Requirements for plant tissue culture laboratory, techniques for plant tissue culture, media components and preparations, sterilization techniques and inoculation of various explants, aseptic manipulation of various explants, callus induction and plant regeneration, Micropropagation of important crops, anther, embryo and endosperm culture, hardening/ acclimatization of regenerated plants, somatic embryo genesis and synthetic seed production, isolation of protoplast, demonstration of culturing of protoplast, demonstration of isolation of DNA, demonstration of Gene transfer techniques, direct and indirect methods, demonstration of confirmation of Genetic transformation and gel- electrophoresis techniques.

Reference Books

Course No. : ECON-111
Title : Agricultural Economics and Natural Resource Economics
Credit : 3=2+1

THEORY


Natural Resource Economics: Natural Resources - meaning and importance of natural resources. Renewable and non-renewable natural resources - Meaning and importance. Forest Development Programme in India, surface water and ground water-their potential and utilization in Maharashtra. Importance and types of fishery, fishery development policies in India.

PRACTICALS

Exercise on land use classification, crop patterns, distribution of ownership and operational land, trends in wages, area, production and productivity of major crops in the State. Study of trends in natural resources of Maharashtra and India viz; land, forest, water and fisheries.

Reference Books

THEORY
Place of agriculture in National economy and comparison with other countries. Special characteristics of agriculture in Indian economy. Pattern of agriculture holdings, fragmentation, sub-division and consolidation of land holdings. Agricultural Productivity: Trends, causes and consequences of low productivity in India. Input utilization, fertilizers, pesticides etc. Green revolution: New strategy in development of Indian agriculture, High Yielding Varieties (HYV) programme, irrigation development and farm mechanization. Five Year Plans and place of agriculture in National planning, problems of food security. Demographic profile of Indian population. Review of development programmes: Programmes for weaker sections including Tribal, Integrated Rural Development, nature and dimensions.

Reference Books

Course No. : ABM-111
Title : Introduction to Agri-Business Management
Credit : 2=1+1

THEORY
Balance sheet, Income account/ Profit and Loss Statement, Efficiency measures, Partial and Complete budgeting.

**PRACTICALS**
Preparation of alternate farm plans and farm records. Estimation of inventory, turnover and levels of inventory. Preparation of balance sheet and income statement. Farm efficiency measures and evaluation of available resources. Reorganization of farm business and farm adjustment programme under uncertainty, Farm accountancy, preparation of partial and complete budget.

**Reference Books**

---

**Course No.** : ABM-112  
**Title** : Agro-based Industrialization  
**Credit** : 2=2+0  

**THEORY**

**Agro-based Industries:** Importance and need, classification of industries, role of agro-processing industries in the Indian economy. Types of agrobased industries-sugar mills, cotton ginning mills, dal mills, rice mills, poha mills, fruit processing industries, NOGA (Nagpur Orange Growers Association) institutional arrangement, steps in setup of agro-based industries. Constraints in establishing agro-based industries. Basis of development of agro-based industries in specific pocket e.g. sugar mills in Western Maharashtra, Ginning and processing of cotton in Vidarbha, Dal mills and Rice mills etc. Growth and Modernization of these Agro based industries in different regions – Modernization of industries, Five Year Plans: Planwise development. Employment and income generation from agro based industries at macro level and overall impact in the development of the region /State. Potential
agro-based industries- Grape wine making industries, soybean-processing industries, mango pulp processing industries. Govt. policies relating to agro-processing industries. Problems of agro-processing units. guidelines for financing of agro-processing industry in India.

**Reference Books**


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Course No. : **MATH-111**
Title : **Mathematics**
Credit : 2=2+0

**THEORY**


**Reference Books**


---

Course No. : **LANG-111**
Title : **Structural and Spoken English**
### PRACTICALS

The syntactic, semantic and graphic structures of English, form and structural meaning, word order, the basic sentences, inflexions, verb patterns, group structures, adverbial group, active and passive voice, prepositions, articles, avoidance of repetition, layers of meaning, hyponymy, polysomy, antonomy, word collection associated vocabulary. The graphic substance, the paragraph, comparison, structures, spelling rules of English regulations, punctuation, public speaking, oral presentation.

### Reference Books


### Course Details

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-111</td>
<td>Biology</td>
<td>2 = 2 + 0</td>
</tr>
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</table>


### Reference Books


**SEMESTER - II**
THEORY

**Farming System:** Definition, scope, classification, components of farming system. Crops and cropping system, animal components like dairy, poultry, sheep, goat, piggery fish, duck, rabbit, trees for fuel, timber, fodder, fruits, and sericulture, apiculture, mushroom. Interactions between components, complementary and competitive factors governing choice and size of enterprises and resource allocation in farming system. Integrated farming system models for irrigated and rainfed situation. **Cropping System:** Interaction-competitive allelopathy legume effect, effect of preceding crop and associated crops. Indices for evaluation of cropping systems. Agronomic requirements in management of cropping system. Cropping scheme, calendar of operations, preparation of cropping scheme for wet garden and dry lands. **Sustainable agriculture:** Introduction, definition, goal and current concepts, sustainable yield index and sustainable value index. **Organic farming:** Definition, principles and components. Recycling of organic waste, management practices to prevent environmental deterioration, concept of sustainable agriculture. Resource management under constraint situations. Agronomic measures for management of scarce and costly inputs, delay and insufficiency of water supply, layout cost, scarcity and peak season demand, poor quality of irrigation water, soil problems, nutrient deficiency, problematic weeds, cost reduction in crop production, low cost technology and non-monetary inputs. Reclamation and development of wastelands and problematic soils, sewage farming and water farming. Rainfed farming techniques for soil and water conservation, management practices for rainfed crops, drought management, crop diversification, contingency planning for abnormal weather situation, alternate land use systems.

**Reference Books**

6. Rangaswamy, P. Dry Farming Technology in India. Agricole Publishing Academy, New Delhi.

Course No. : BOT-122  
Title : Environmental Science  
Credit : 2=1+1

THEORY

PRACTICALS
Reference Books


Course No.: SSAC-121
Title: Soil Fertility, Fertilizers and Nutrient Management
Credit: 2=1+1

THEORY


PRACTICALS

Reference Books


Course No. : ENGG-121
Title : Farm Structures, Machinery and Green House Technology
Credit : 2=1+1

THEORY

Introduction, location, size and management of farmstead, septic tank, soak pit, its location, capacity, construction and maintenance, farm fencing and their types. Animal shelter and their types, poultry housing and their types, building materials, farm silos and their types. History, development and scope of green house technology, green house planning, layout and its construction. Effect of temperature, pH and CO$_2$ with reference to micro-climate on green house crops. Role of light, ventilation, cooling, utility of green house for different crop production, covering material, irrigation, fertigation and humidification inside green house. Pests and disease control in green house. Post harvest technology.

PRACTICALS

1. Planning and layout of farmstead.
2. Planning and layout of dairy barn.
3. Planning and layout of poultry house.
4. Study of farm fencing.
5. Study of building materials.
7. Study of planning of green house.
8. Study of construction materials for green house.
9. Study of glazing material.
10. Study of irrigation system for green house.
11. Study of cooling system for green house.
12. Visit to various green houses.

Reference Books

Course No. : ENT-121
Title : Integrated Pest Management
Credit : 2=1+1

THEORY
Importance- hazards- chemical pesticides, Definition of IPM, ETL , natural control/ present-status of pesticides (chemical/ bio-pesticides) in India, components of IPM. Integrated Pest Management strategies for paddy, pigeon pea, chickpea, cotton, sugarcane, grape, pomegranate, mango, citrus crops, okra, brinjal, tomato, potato, cabbage, cauliflower etc. Pesticide residue management, role of APEDA in relation to residues.

PRACTICALS
Pesticide manufactures, commonly available chemical and bio-pesticides in market. Visit to pesticide firms and bio control laboratory.

Reference Books
Course No. : EXTN-121
Title : Dimensions of Agricultural Extension
Credits : 2 =1+1

THEORY


**Developmental programmes of pre-independence era** - Sriniketan, Marthandam, Gurgaon Experiment and Gandhian Constructive Programme, **Development programmes of post-independence era**, Firka Development, Etawah – Pilot Project and Nilokheri Experiment.


PRACTICALS

1. Visit to a Village and Krishi Vidnyan Mandal to study the ongoing development programmes.
2. Visit to study the functioning of Gram Panchayat
3. Visit to Watershed Development Project.
4. Visit to a village for study of the Self Help Groups (SHGs).
5. Organizing PRA techniques in a village for identifying the agricultural problems.

Reference Books
2. Directorate of Extension: Extension Education in Community Development. Govt. of India. Delhi.

Course No. : ECON-123
Title : Farm Business Management
Credit : 2=1+1

THEORY

Farm Management: Meaning and definition, objectives and scope. Basic economic principles of Farm Management, types and systems of farming, cost and returns, farm planning and budgeting, risk and uncertainty, Farm Records: Objectives, types and importance, farm inventory and depreciation, farm efficiency measures. Production Economics: Meaning, definition, nature and scope of agricultural production economics, basic concepts and terms, objectives. Basic relationships: Factor-Product relationships, Factor-Factor relationships and Product-Product relationships, cost concepts used in farm management studies.
PRACTICALS
Exercises on principles of farm management. Stages of production and relationship between average, marginal and total product, Working out optimum level of input and optimum product combination. Study of relationship between total, average and marginal costs. Exercises on farm planning, budgeting and farm records.

Reference Books

Course No. : ECON- 124
Title : Money and Banking
Credit : 2=1+1

THEORY
Money: Meaning, importance, evolution, qualities of good money material, coins and coinage, kinds of money, function of money, demand for and supply of money, monetary standards, bimetalism, monometalism and paper standard.

Banking: Types of banks, role in economic development, functions and achievements of commercial banks. Central bank – banking principles and functions of central bank, measures of credit control, monetary policy. Nationalization of banks and its impacts, role of credit institutions in development of agriculture.

PRACTICALS
Study of credit instruments i.e. cheque, promissory notes, hundies etc. Nature and types of securities. Organization and working of RBI, co-operative and commercial banks. Various schemes meant for weaker sections implemented by banks.
Reference Books


4. Datta, Ruddar and K.P.M. Sundaram. Money, Banking and Trade. S. Chand and Co., Ltd., 7361, Ram Nagar, Qutab Road, New Delhi-110 055.

Course No. : MKT-121
Title : Introduction to Agricultural Marketing
Credit : 2=1+1

THEORY

Agricultural Marketing: Definition and concepts, scope and subject matter. Market and marketing: Meaning, definition, components of a market, importance of agricultural marketing, classification, types of markets, Channel of Marketing: Meaning, definition, channels of different products, market functionaries and their role. Marketing Efficiency: Meaning, definition, marketing costs, margin, price spread, factors affecting the cost of marketing, reasons for higher marketing costs of farm commodities, ways of reducing marketing cost. Study of Market Intelligence and Market Integration: Meaning, definition, types of market integration, market function, AGMARK, price trends, market information, co-operative agricultural marketing and public agencies involved in agricultural marketing, viz. FCI, NAFED, STC, etc. Functions of price mechanism, interrelationship between prices of inputs and output. Nature and supply of agricultural products, marketable and marketed surplus. Types and reasons for price movements and their effect on agriculture price stabilization and price support policies, Warehousing: State and Central Warehousing Corporations, objectives, functions, advantages, speculation, future trading and hedging.

PRACTICALS

Reference Books


Course No. : ABM-123
Title : Entrepreneurship and Personality Development
Credit : 2=2+0

THEORY


Reference Books


SEMESTER - III

Course No. : HORT-232
Title : Production Management of Vegetable and Floriculture Crops
Credit : 2=1+1

THEORY

Vegetable: Scope and importance of vegetable crops, area, production, distribution, exports and imports of vegetable from Maharashtra and India. Nutritive value, classification of vegetables, types of vegetable farming - kitchen garden, market garden, truck garden, vegetable production for processing, seed production, etc. Nutrition, production of vegetables, role of growth regulators in vegetable production. Cultivation of solanaceous crops, cucurbits, peas, beans, cole crops, root crops, bulb crops, tuber crops, okra, leafy vegetables, salad crops, perennial vegetable etc.

Floriculture: Importance and scope of floriculture industry in Maharashtra and India. Horticulture gardening. Principles of garden design. (Formal and Informal Garden and Land Scaping), garden features, land scaping of homes, educational institutes, hotels, resorts, city parks and industries, road side planting. Production technology of rose, chrysanthemum, aster, carnation, jasmine, marigold, gladiolus, tuberose, gaillardia, orchids, anthurium, gerbera and dahlia.

PRACTICALS

1. Identification of vegetable and floriculture and their varieties.
2. Layout of vegetable and floriculture Garden.
3. Harvesting and Post harvest handling of vegetable and floricultural crops.
4. Working out cost of cultivation of vegetable and floricultural crops.
5. Visit to commercial vegetable and floriculture gardens.
6. Identification of important pest and diseases of vegetable and floricultural crops.
7. Study of area, production, productivity, export - import of vegetables and floriculture of Maharashtra and India.

Reference Books

Course No. : SSAC-232
Title : Soil, Water and Plant Analysis
Credit : 2=0+2

PRACTICALS
Layout, design and requirement of soil, water and plant analysis laboratory. Soil sampling, processing of soil samples, soil physical and chemical properties, texture, bulk density, water retention, soil reaction, conductivity, calcium carbonate, organic carbon, available NPK, Fe, Mn, Zn, Cu, B and Mo in soil, secondary nutrients Ca, Mg, S in soil, exchangeable cations Na, K, cation exchange capacity, base saturation, exchangeable sodium percentage, gypsum, requirement of alkali soils, lime requirement of acid soils. Critical values of nutrients in soils, computation of NPK fertilizer requirement as per fertilizer prescription equation for different crops. Irrigation water analysis: Sampling, pH, EC, cations and anions, SAR and RSC, criteria for irrigation water suitability, city and agro industrial effluents. Plant analysis: Sampling, processing, total N, P, K, Ca, Mg, S, Fe, Mn, Zn, Cu, B and Mo, in plants, critical values of nutrients in plants, plants nutrient diagnostic norms.

Reference Books

Course No. : ASDS-231
Title : Animal Production Management
Credit : 2=1+1

THEORY
Scope of livestock in Indian economy. Livestock census and trend of livestock production. Terminology used in livestock care and management of livestock, i.e. calf, heifer, milking animal, dry animal, pregnant animal, draft animal and breeding bull. Housing of different livestock. Routine practices on livestock farm. Preparation of animal for different purposes.

**PRACTICALS**

Study of body parts of different classes of livestock, i.e. cattle, buffaloe and poultry. Handling and control of animals. Study of daily routine practices on livestock farms of different species. Vaccination schedules of livestock and poultry. Record keeping, judging of animals for dairy and draft purpose, study for breeding efficiency, study of instruments used in AI. Layout of various dairy structures. Utilization of dairy farm wastes. Routine management practices of raising broilers and layers.

**Reference Books**


**Course No.** : IWM-231  
**Title** : Irrigation Water Management  
**Credit** : 2=1+1  

**THEORY**

Water resource development and utilization in India, Importance of irrigation, soil water plant relationship, measurement of soil moisture, irrigation water, infiltration, water requirement of crops, consumptive use and evapotranspiration, Irrigation efficiencies. **Irrigation methods:** border, check basin, furrow, sprinkler and drip irrigation. **Sprinkler irrigation:** System, types, planning, layout, components, care and maintenance. **Drip irrigation:** Types, components, planning layout, care and maintenance.
PRACTICALS
1. Determination of soil moisture by gravimetric method.
4. Estimation of water requirement by different methods.
5. Study of different components of drip irrigation system.
6. Study of different components of sprinkler irrigation system.
8. Cost economics of drip/sprinkler system.
9. Care and maintenance of micro-irrigation system.

Reference Books
5. Radhey Lal. Irrigation Hydraulics. Saroj Prakashan, Allahabad

Course No. : ENGG-232
Title : Post-Harvest Technology for Cereals, Pulses and Oilseeds
Credit : 2=1+1

THEORY
PRACTICALS
1. Study of different moisture measuring methods.
2. Study of various types of grain dryers.
3. Study of different types of sieves and screens.
4. Study of cleaning equipments.
5. Study of graders and separators.
6. Study of belt, screw conveyors and bucket elevators (excluding design).
7. Study of modern rice milling machineries.
8. Study of pulse milling (Flow charts of wet milling and dry milling of pulses).
10. Study of refrigerated storage / cold storage.
12. Economics of drying methods.

Reference Books

Course No. : PATH – 231
Title : Integrated Disease Management
Credit : 2=1+1

THEORY
Disease, concept of disease, economic importance of diseases, losses, epiphytotic diseases. Definition of IDM, IDM concept, advantage and importance, components of IDM, development of IDM strategy for important crops viz, Cotton, Groundnut, Sunflower, Sorghum, Bajra, Rice, Wheat, Sugarcane, Grape, Banana, Pomegranate, Mango, Citrus, Fig,

PRACTICALS

Reference Books
2. Agrios, G. N. Plant Pathology. Published by a division of Reed Elsvier India Pvt., Ltd., New Delhi

Course No. : ECON-235
Title : Agricultural Co-operation, Institutions and Management
Credit : 3=2+1

THEORY

PRACTICALS
To study working of Primary Agricultural Co-operative Credit Society, District Central Co-operative Bank, State Co-operative Bank, M.S. Co-operative Bank for Agricultural and Rural Development. Forms of Co-operatives. Procedure for obtaining loans. Formulation of loan proposals. Economic feasibility of a farm credit proposal. Study of Cooperative Marketing,
Study of processing of cereals, pulses and oilseeds managed by co-operatives, Study of NCDC.

**Reference Books**

4. Hajela, T. N. Co-operation Management in India.

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**Course No.** : MKT-232  
**Title** : Marketing Institutions and Organizations  
**Credit** : 3=2+1

**THEORY**

Objectives, structure and functioning of Agricultural Marketing. Institutions and Organizations. Agricultural Produce Market Committee, Cotton Corporation of India and State Cotton Federation, Food Corporation of India (FCI), State Trading Corporation (STC), National Co-operative Marketing Federation, Agricultural Processed Products and Export Development Authority (APEDA), Maharashtra State Agricultural Marketing Board (MSAMB), The National Agricultural Co-operative Marketing Federation of India (NAFED), Jute Corporation of India, Tobacco Board, Coconut Board, Grape Growers Association (Mahagrapes), Mango Growers Association (Mahamango), The Directorate of Marketing and Inspection (DMI), National Dairy Development Board (NDDB).

**PRACTICALS**

Visit to different marketing institutions/organizations (located in the local district). To study the organization, function and achievements in marketing of farm products.

**Reference Books**

Course No. : ABM – 234
Title : Communication Skill for Business Management
Credit : 2=1+1

THEORY

Extension teaching methods and aids: Selection of methods in teaching, various teaching aids, their applications, etc. Social change and consequences of innovations: Meaning of social change, consequences, equality in the consequences of innovation. Opining leaders and change agents: Meaning and their role in agricultural development.

PRACTICALS

Reference Books
SEMESTER - IV

Course No. : HORT-243  
Title : Post-Harvest Technology of Horticultural Crops  
Credit : 3=2+1

THEORY


PRACTICALS

Maturity indices, harvesting of various fruits and vegetables. Pre-cooling, grading, packaging and storage of fruits and vegetables. Pre-harvest and post-harvest application of chemical substances. Harvesting, packaging, storage and marketing of cut flowers. Identification of different equipments used in processing of fruits and vegetables. Canning of fruits and vegetables. Preparation of jams, jellies, marmalade, squashes, syrups, preserves, ketchup, pickles, chutney etc. Drying of fruits and vegetables. Working out the economics of important processed products. Study of spoilage of different processed products. Visits to fruits and vegetables preservation units.

Reference Books

3. Kader, A.A. Post Harvest Technology of Horticultural Crops. Publication Co. 3311, University of California, Division of Agricultural and Natural Resources, California.
THEORY

PRACTICALS
1. Organoleptic quality and evaluation of milk and milk products- meat, egg, wool and chicken.
2. Physical properties of milk, meat, egg, wool and chicken.
3. Chemical composition of different animal products.
4. Study of different marketing systems for animal products.
5. Processing and preservation of animal products for marketing.
6. Different packaging materials useful for animal products.
7. Visit to existing marketing structures of animal products, co-operatives and private organizations.
8. Different methods of slaughtering the animals and their effects on quality of products.

Reference Books
THEORY


PRACTICALS

1. Classification of data (problems on exclusive and inclusive classification).
2. Computation of AM, GM, HM, Median, Mode for discrete ungrouped data and grouped data.
4. The estimation of measures of dispersion, range, mean deviation from averages, variance, standard deviation, standard error and relative measures such as CV, coefficient of MD.
5. The computation of range, MD, variance, standard deviation, standard error and CV coefficient of MD for grouped data.

6. Student’s ‘t’ test for one sample, paired ‘t’ test and unpaired ‘t’ test and ‘F’-test.

7. Computation of $\chi^2$ for one sample 2 x 2 and n x k contingency table.

8. Calculation of correlation coefficient and regression coefficient. $Y = a + bx$, $X = a' + b'y$ and testing significance of r and b.

9. Computation of three variable multiple linear regression equation by using matrix inverse and testing significance of partial regression coefficient and $R^2$.

10. Fitting of Binomial and Normal distribution.

11. Fitting of linear, semi-log parabolic trend equations to time series data.

12. Fitting of modified exponential, Gompertz, and Logistic growth curve.

13. Seasonal variations-By methods of simple averages and ratio to moving average method.

14. Seasonal variations by ratio to trend method and method of link relatives.

15. Measurement of cyclic and irregular variation.


17. Procedure of base shifting, deflation of dices.

Reference Books


Course No. : ECON-246
Title : Scientific Methods in Report Writing
Credit : 2=1+1

THEORY

**studies:** Meaning, selection, analysis and interpretation. Economical and statistical analysis of large sample, use of various tools and tests.

**PRACTICALS**
1. A study of scientific steps in social science.
2. Study of classification of data.
3. A study of research process in flow chart.
4. A study of parts of table and types of tabulation.
6. Study of elements and types of economic analysis (Types only).
7. Principal forms of presenting analysis, i.e. tabular form, graphic form, line graphs, bar graphs, pie or circular graph, map etc.
8. Study of different steps in reporting of research.

**Reference Books**

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**Course No.** : MKT-243  
**Title** : Input Marketing Management  
**Credit** : 3=2+1

**THEORY**
PRACTICALS

1. Visit to seed organizations (MSSC, Mahabeej etc.) – Study of production, pricing, transportation and promotion of seeds.
2. Study of Chemical fertilizer production Units.
3. Public sector, Co-operative Sector, Private Sector Companies and their products range.
4. Study of Demand and Supply of chemical fertilizers and gap therein.
5. Types of agro-chemicals used as agricultural inputs.
6. Visit to Agricultural Exhibition. Role of Agricultural exhibitions in marketing of Agro-inputs.
7. Market survey to know potentiality of different crop seeds, fertilizers, various plant protection chemicals and farm machineries of local market.

Reference Books


Course No. : MKT-244
Title : Rural Marketing and Market Infrastructure
Credit : 3=2+1

THEORY
Profile of rural marketing, definition, classification, strategies, characteristics, changing pattern of rural market, problems in rural marketing. Rural marketing in India – Difference between urban and rural market, study of rural resources, rural poverty. Rural marketing and research – Sources for conducting marketing research, dos and don’ts for rural marketing and rural industries. Rural segmentation - Targeting and positioning. Rural product and prices – Introduction, packing, pricing methods, rural branding. Rural distribution / channels of distribution, functions of rural sales persons.

PRACTICALS
Visits to various rural markets including daily, weekly bazaars etc and their complete profile studies. Studies of market infrastructure such as market yard, grading and methods of sale.

Reference Books
Course No. : MKT-245  
Title : Consumer Behaviour  
Credit : 2=1+1  

THEORY  

PRACTICALS  

Reference Books  

Course No. : ABM – 245  
Title : Agri-Business Operations, HRD and Strategic Management  
Credit : 2=2+0  

THEORY  

**Reference Books**

4. Aswathappa, K. Human Resources and Personal Management.

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**Course No.** : ABM-246  
**Title** : Information Technology in Agri-Business  
**Credit** : 2=1+1

**THEORY**

History of computers, hardware and software of computers, MS Office (MS word, MS power point, MS Excel)- Scope, uses and its application. **Information Technology:** Meaning, role and importance in agri-business and agricultural marketing, Applications of information technology. Networking: Definition, uses, types of network (LAN, MAN, WAN) INTRANET, EXTRANET. **Internet:** Definition, history, scope, applications e-mail, architecture of e-mail, adding Internet connection, sharing Internet connections. **Multimedia:** Definition, uses, application in agri-business and agricultural marketing, types of media
(study of various HTML Tag). **Database:** Meaning, uses of database, how to store organizational data in a systematic form, functions, formulae used in database, printing of database. **E-Commerce:** Meaning, definition, applications in agri-business and agricultural marketing, Advantages over traditional marketing.

**PRACTICALS**

1. At least 10 Practicals based on Web design using HTML editor.
2. At least 5 database Practicals using ACCESS/ Fox-Pro (Programmes)
3. Visits to C-DAC, Government and private organisations engaged in e-commerce.

**Reference Books**

Latest books available on computers and software and their applications.

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**Course No.** : ABM-247  
**Title** : Office procedures for Agri-business  
**Credit** : 1=0+1

**PRACTICALS**

Practicals based on office documents, drafting (Letter, semi-official, purchase, enquiry, quotations, purchase orders, queries and replies), payments, billing and preliminary requirements, files, filing system and indexing, report and publication procedure, visits to ISO (International Standard Certificate) certificate organisations, Government and private. Study of these offices and their functioning.

**Reference Books**

3. Accounts books prescribed for post-recruitment examination of State Government.
5. Pillai, R.S.N. and Bagavati. Office Management. S. Chand and Co., Ltd., 7361, Ram Nagar, Qutab Road, New Delhi-110 055.
THEORY


Reference Books

Course No. : ECON- 358  
Title : Input-Output Measurement Techniques  
Credit : 2=1+1

THEORY

PRACTICALS
Estimation procedure, interpretation and economic application of linear, Quadratic and Cobb-Douglas production functions by OLS method. Returns to scale and farm size- examples. Derivation of cost and supply functions from production function.

Reference Books
Course No. : MKT- 356  
Title : Retail Marketing  
Credit : 3=2+1

THEORY

Retailing: Concept, types of retailers, supermarkets, factory outlets, hypermarkets. Non-store retailing. Retailer-marketing decisions. Direct selling, one to one selling, one to many selling, direct marketing and multilevel marketing. Major types of retail organisation, cooperative chain stores, voluntary chain, retailers and consumers cooperatives. Retail Chain Management by Corporate Houses. Procurement decision. Price, promotion and place decision. Role of Consumer, Packaging and Market Segmentation in Retail Marketing. Store Management: Retail location, merchandising, using price to stimulate market sale. 


PRACTICALS

Studies and surveys of different types of retailing stores (public, private and co-operative) in the jurisdiction. Case studies of major types of retailing stores. Studies of retailers carrying out different marketing functions. Study of market segmentation for retail market. Study of corporate retail-chain stores.

Reference Books


Course No. : MKT- 357  
Title : Trading of Agricultural Commodity-I  
Credit : 2=1+1

THEORY

Importance of agricultural commodities in agricultural marketing. Marketing of cereals- rice, wheat and jowar. Marketing of pulses-mung, tur, gram, udid etc. Average cost of processing wheat into wheat flour, paddy to rice, comparison of different rice milling methods. Study on
price spread of important crops and producer’s share in consumer’s rupee. Marketing of mango, citrus and grapes. Marketing of vegetables. Improving efficiency in commodity marketing. Role of co-operative and regulated market in commodity marketing.

PRACTICALS

Practical exercises on marketing costs, market margins and producer’s share in consumer’s rupee for important cereals, pulses, fruits and vegetables.

Reference Books


Course No. : MKT - 358
Title : Market and Trade Acts
Credit : 2=2+0

THEORY


Reference Books


Course No. : ABM – 358
Title : Inventory and Risk Management
Credit : 2=1+1

THEORY

PRACTICALS
Estimation of Economic Order Quantity (EOQ). Estimation of cost of carrying and ordering inventories. Estimation of optimal level of safety stock. Visits to private companies for observing their working in inventory and stock management etc. Hypothetical examples on risk minimisation.

Reference Books
Course No. : ABM – 359  
Title : Agro-Tourism  
Credit : 2=1+1

THEORY

Agro-tourism: Introduction, importance, scope, forms of agro-tourism, advantages and implementations, introduction to Indian culture. Govt. policies and legislations in respect of tourism and agro-tourism and environment protection laws. Requirements for Agro-tourism. Farm, forest, garden, fish tank/ponds, residential huts, etc. Constraints in operation and management of Agro-tourism activities. Management of resources – Human resources, Natural resources and Garbage management at Agro-tourism centre.

Entrepreneurship development: Role and functions, Hospitality: Food and beverages and accommodation services.

Communication skill and service; Capital investment, sources and capital budgeting.

Project proposal- Preparation and feasibility tests, Accounts and record keeping etc. Marketing strategies for Agro-tourism products and services. Publicity of tourism- Advertisement and use of media.

PRACTICALS

Visit to various near by agro-tourism centres.

Study of different types of Agro- tourism centres and services offered by them etc.

Report on agro-tourism project.

Reference Books

Available recent literature and publications, Government policies on Agro-tourism

THEORY

Introduction, meaning and role of production management in agriculture. Elements of production, design and process planning. Effect of technological changes on the production management. Factors influencing the plant location in Agri-business activities.

Agricultural Production Planning and Control: Nature, basic functions of production planning and control, its objective, different system of manufacture production cycle, scheduling and control of production and its control procedures and devices. Total quality management, considerations, stage of quality control, standard and specifications, quality assurance and quality circles. Scheduling psychology, methodology and control techniques. Legal aspects of quality control.

Resource Planning and Budgeting: Importance and techniques, methods to study work measurement. Nature and objectives of production planning and control. Variables subject to control. Production control for contentment’s, intermittent and project system. Production forecasting and production inventories. Aggregate planning, guidelines, graphic and chart planning.


PRACTICALS

1. Study of production management aspects of selected agri-business units.
2. Visit to selected agri-business units
3. Discussion with entrepreneurs.
4. Points to be considered while preparing the reports on agri-business management.
5. Layout - example of large enterprise that consist of many small and medium plants.
6. Scheduling a planning function and expedition control function of small firms.
7. Preparation of memorandum, explaining merits of COS and outline how the changeover is going to take place and define the responsibility of each section in the new organization.
8. Production planning and control: Nature, basic function of production planning and control, its objective, variants in different system of manufacture production cycle.
9. Resource planning and budgeting – Importance and technique, work study, method of study, work measurement.
10. Source of supply of material – selection and evaluation.
11. Purchase management – Cost reduction, stores management, location storage method and documentation.
12. Institutions engaged in providing service/ facilities.
14. Production control for contemns, entrepreneurs and project system.
15. Production forecasting and production inventories

Reference Books
2. Gupta, S. P. Statistical Methods, S. Chard and Sons, New Delhi.

Course No. : ABM-3511
Title : Agro-Processing Management
Credit : 2=1+1

THEORY
Role of agro-processing industries in the Indian economy. Status and potential of Indian Agro-processing industries. Foodgrains, commercial crops, fruits and vegetable processing, livestock processing, fishery product etc. A policy environment of agro-processing industries- Development, management structure and communication. Work performance efficiency, public contact and public participation in agro-processing industries. Decision making process and entrepreneurial efficiency. Government policies relating to agro-processing unit. Interdependence of agro-processing industries, Problem of agro-processing units. Guideline for financing of agro-processing industries in India.

PRACTICALS
Preparation and follow-up of proposals of processing units like Ginning and Pressing, Spinning mills, Oil mills, Dal Mills, Sugar factories, Milk processing units, Wine making units etc. Exercises on economics of processing of agricultural commodities. Study of agro-
processing industries of different commodities - Foodgrains, Fruits, Vegetables, Milk and Milk products etc.

Reference Books

Course No. : ABM- 3512  
Title : Marketing Management and Policies  
Credit : 2=1+1

THEORY

PRACTICALS
Case Studies on marketing strategies of different agro-based products. Case Studies on “Managing the Product Life Cycle”. Study on different marketing activities carried out by different Companies. Visit to advertising agencies promoting agro-based product etc.

Reference Books
SEMESTER - VI

Course No. : PATH - 362
Title : Bio-fertilizers and Mushroom Production
Credit : 2=1+1

THEORY


PRACTICALS

1. Preparation of vermi composting unit.
2. Preparation of culture media.
3. Preparation of master and commercial spawn of Agarics sp., Pleurotus sp. and Volvariella sp.
4. Cultivation of Oyster mushroom, button and paddy straw mushroom
5. Economics of mushroom cultivation

Reference Books

Course No. : ECON-369
Title : Planning, Formulation and Evaluation of Business Projects
Credit : 3=1+2

THEORY
Agriculture Project: Meaning, types and their importance in development. Economic and financial analysis of agricultural projects. Cost-benefit estimates of different types of projects, Cash-flow, Shadow price, calculation of economic prices, comparing costs and benefits such as the Net Present Worth (NPW or NPV), the Benefit Cost ratio (BCR), Internal Rate of Returns (IRR), Cash flow, Pay Back Period (PBP). Guidelines for building up cost and return analysis, project area, characterization and components, financial and economic analysis. Project approach to agricultural leading enterprises practical steps in project formulation. Financial appraisal of a project. Application of Programme Evaluation and Review Technique (PERT, CPM), Sensitivity analysis, Social Cost Benefit Analysis (SCBA).

PRACTICALS
Practical exercises on project preparation for securing loan. Estimation of measures of economic evaluation such as NPV, BC ratio, Internal Rate of Returns (IRR), Pay Back Period (PBP). Sensitivity analysis to judge the economic viability of a project. Complete project proposal. Exercises on CPM and PERT techniques.

Reference Books

Course No. : ECON-3610  
Title : Financial Management in Agri-Business  
Credit : 3=2+1  

THEORY  

PRACTICALS  
3 R’s, 5 C’s and 5 P’s of Agriculture credit. Financial ratio analysis: Liquidity ratio, Leverage ratios, Turnover analysis, Profitability ratios, Valuation ratios with their example, Comparative analysis. Application of financial statement analysis, Break-even analysis, Investment analysis.

Reference Books  

Course No. : MKT- 369  
Title : Trading of Agricultural Commodities-II
THEORY
Marketing of commercial crops with special reference to all marketing functions and price analysis. Commercial commodities - cotton, sugarcane, onion, grapes, banana, citrus, mango, cut flowers – roses, gerbera, gladiolus, etc. vegetables – cauliflower, cabbage, tomato, potato, ladies finger, brinjal. Existing levels of processing and future potential. Export and export potential.

PRACTICALS
Practical exercises on performance of various marketing functions of selected commercial crops. The estimation of marketing cost, market margins and producer’s share in these commodities. Visits to various commodity markets, processing units and their detail studies.

Reference Books

Course No. : MKT- 3610
Title : Market-Led Extension
Credit : 2=1+1

THEORY

PRACTICALS
Study of APMC with reference to market led extension activities.
Assessment of training needs of the farmers with reference to marketing of farm produce.
Study of various private extension approaches.

Reference Books
THEORY


Product Selling: Personal selling, types, process and models. Managing sales force, personal selling and promotion mix, preliminary considerations in planning. Framework, strategies in international marketing, major players in international markets, promoting and international strategies.

PRACTICALS

Study the promotion skills of wholesalers and retailers. Study the promotion strategies implemented by various agri-based companies for different agricultural commodities and their products (Foodgrains, fruits, milk and milk products, etc.). Study the role of advertising in Agriculture sector.

Reference Books


Course No. : ABM- 3614
Title : Organizational Behaviour
Credit : 2=2+0

THEORY

Organization and its analysis: Nature of organization, scope and significance of organization behaviour, relevance of Organizational Behaviour (OB) in today’s business environment.


Reference Books
1. Korman, Abrahim K - Organizational Behaviour
2. Singh and Chhabra - Organization Theory and Behaviour
3. Khanka ,S. S. Organizational Behaviour
4. Maslow, A. H. Motivation and Personality
5. Stephen, P. Robbins. Organizational Behaviour

Course No. : ABM- 3615
Title : Managerial Accounting
Credit : 2=1+1

THEORY

PRACTICALS

Reference Books
3. Inamdar, S.M. Cost and Management Accounting.
4 Kulkarni, Mahesh. Management Accounting.
5. Grewal, T.S. Double Entry Book Keeping.

Course No. : ABM- 3616
Title : Market Survey and Price Analysis
Credit : 2=0+2

PRACTICALS

Reference Books
SEMESTER - VII

Experiential Learning

(A batch of 4 to 5 students will work in one group)

A. Compulsory Module (Any one)

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<tr>
<th>Course No.</th>
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<tbody>
<tr>
<td>Title</td>
<td>Marketing of Agricultural Products</td>
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Objectives

1. To study the various agencies involved in the marketing of agricultural products.
2. To examine the various functions carried out by these agencies in the marketing of the agricultural products.
3. To estimate the cost of marketing and price spread for selected agricultural products.
4. To study the problems in the marketing of various agricultural products.

Programme: To identify the agricultural products which have marketable and marketed surplus in the locality. Select one or two agricultural products for, detailed study of marketing with appropriate (10-30) sample cultivators. Analyse the information as per the objectives. Report writing.

Analytical tools (to be used): Standard techniques to be used in estimation of marketing cost and price spread.

Financial provision: Provision of financial aid for visiting the cultivators and markets will be made by the concerned institute.

Information proforma: To be provided by the institute.

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<tbody>
<tr>
<td>Title</td>
<td>Marketing of Agricultural Inputs</td>
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Credit : 10=0+10

Objectives
1. To enlist the various agricultural inputs required in agricultural production.
2. To study the channels in procurement and distribution of major agricultural inputs.
3. To study the trends of supply, demand and prices of selected agricultural inputs (one or two).
4. To examine the various Govt. policies pertaining to use of various agricultural inputs.

Programme: Students will study the various agricultural production systems and the major inputs used in their production. By visiting the various suppliers of agricultural inputs, students will trace their channels. They have to visit the various Govt. agencies, markets for getting acquainted with the Government policies in respect of various inputs.

Analytical tool: Not required

Financial provision: Financial provision will have to be made for the visit by the concerned institute.

Information proforma: Not required.

Course No. : ABM-4717
Title : Production and Marketing of Crops Produced under Protected Cultivation
Credit : 10=0+10

Objectives
1. To obtain the information on types of protected cultivation units in the study area and the crops grown therein.
2. To work out the cost of erection of selected protected cultivation units and its management.
3. To estimate the cost of production of crops grown in the Unit.
4. To study the marketing of crops grown and their profitability.
5. To study the problems in management of production and marketing of crops.

Programme: The student will select the specific protected cultivation unit from among the list of the surveys made. All the information pertaining to erection of protected cultivation unit from the manager/owner will be collected along with management practices carried out.
by the farm unit in raising and marketing of the crops. The report indicating the management functions, cost estimates and profitability of the crop/unit will be prepared.

**Analytical tools (to be used):** For estimation of cost of production, amortization technique will have to be used by the students. Students have to use the financial feasibility indicators like B: C ratio, IRR, PBP, etc.

**Financial requirement:** Provision for visiting the protected cultivation units and back for the period will have to be made by the concerned institute/college.

**Information proforma:** The specific proforma will be provided to the students.

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<tr>
<th>Course No.</th>
<th>ABM-4718</th>
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<tbody>
<tr>
<td>Title</td>
<td>Commercial Production of Livestock Units</td>
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<tr>
<td>Credit</td>
<td>10=0+10</td>
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</tbody>
</table>

**Objective**

1. Survey of dairy units, goat and sheep rearing units and poultry units in selected region.
2. Study of specific units with regards to size, number of animals/birds reared, their managements etc.
3. To estimate the cost of production, details of marketing and profitability of unit.
4. To examine the physical and economic efficiency of livestock production units.
5. To study the problems in production and marketing and suggest solutions.

**Programme:** After complete survey of commercial production unit in selected area, students in a batch will be asked to choose the unit of their liking under the guidance of concerned course teacher. Then students will visit these units throughout the semester for collection of data pertaining to production, cost and marketing of livestock products. He will workout all the costs, efficiency parameters etc. at the end of semester under the guidance of concern specialist. The report fulfilling all the objectives of experiential learning programme will be submitted at end of semester.

**Analytical tools (to be used):** (1) Financial feasibility analysis-profitability, B: C ratio, break-even point, etc. (2) Market efficiency estimation methods.

**Financial requirements:** Financial provision for frequent visits to livestock units will have to be provided by the College.

**Information Proforma:** The specific information, proforma will be supplied to the students.

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**Course No.**  : ABM-4719
Objectives

1. Acquaintance with the processing units (fruits/vegetables).
2. Study the backward channels in supply of raw materials and other inputs required for the firm.
3. To examine the processing method, packing, grading and storage etc. undertaken by the firm.
4. To study the details of marketing of processed products.
5. To estimate the cost of production, price spread and value addition for the products under study.
6. To examine problems and constraints in value addition for the firm and suggest the solutions.

Programme: The students in a predetermined batch will visit the processing firm regularly during the semester. They will collect the information pertaining to the processing of the product by the firm right from collection of raw materials or inputs required in the processing till the processed products are sold or distributed to the users or consumers. At the end, they will finalize the report taking into consideration the objectives of the experiential learning programme.

Analytical tools (to be used): 1) Use of standard cost concepts (2) Market margin and price spread analysis, and (3) Financial feasibility indicators like B: C ratio, pay back period, IRR and break-even point analysis.

Financial requirement: Students should be provided the financial help to visit the firm frequently. If possible, vehicle arrangement be made to take the students to the factory area and back.

Information proforma: The specific information proforma will be supplied to the students.

Course No. : ABM-4720
Title : Commercial Production of Seed
Credit : 10=0+10

Objectives

1. To understand the procedure required for undertaking production of selected seed.
2. To study the management and resource use in commercial seed production.
3. To estimate the cost of production and profitability.
4. To examine the details of marketing and study the problems if any in production and marketing.

Programme: A batch of students will be assigned to choose the commercial seed production units (may be two or three) in the identified areas for single crop. They will collect all the information in the prescribed proforma. The data will be analysed for fulfilling the specified objectives and the descriptive/subjective test will be conducted under the guidance of the concerned course teacher. The report fulfilling all the objectives with special reference to Agri-business Management will be submitted.

Analytical tools (to be used): 1) The standard cost concept for estimating the cost of production to be used, and 2) Profitability along with B:C ratio, efficiency parameters (for human resource, material resource) will have to be estimated.

Financial requirements: Nil

Information proforma: The specific information proforma will be supplied to the students.

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**Course No.**  : ABM-4721  
**Title**  : Commercial Management of Nursery  
**Credit**  : 10=0+10

**Objectives**
1. To examine the location of the nursery and factors responsible there of.
2. To study the resource needs and assets required for establishment of the nursery.
3. To study the backward and forward linkages in supply, production and distribution of nursery products.
4. To estimate the cost of production, management and profitability of major seedlings unit as a whole.
5. To study the constraints involved in the management of nursery.

**Programme:** The students will undertake the survey of various nurseries in the given jurisdiction. Selection of nursery in consultation with the course teacher will be carried out. They will collect the information frequently and throughout the semester on production, management and marketing management of major seedlings in the unit. Similarly, they will
seek the information on backward and forward linkages pertaining to that nursery from the manager/owner, and will prepare the final report.

**Analytical tools (to be used):** Cost and return analysis to be carried out with the help of standard cost concept.

**Financial requirement:** Provision for visiting the nursery will have to be made by the institute, either through vehicle or by giving T. A. to students.

**Information Proforma:** The students will be provided required proforma for collection of data.

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**Course No.** : ABM-4722  
**Title** : Extension Techniques for Transfer of Technology  
**Credit** : 10=0+10

**Objectives**

1. To study the various extension techniques in transfer of agricultural technologies.
2. Identification of proper extension techniques for appropriate technologies.
3. Application of selected technologies to target group.
4. To examine the problems in transfer of technologies to target groups.

**Programme:** The students will visit the University Extension Department, Department of Agriculture (MS), Agricultural Extension wing and some private agricultural firms/companies/NGOs, etc. to get acquainted with various agricultural extension techniques being used in transfer of technologies. They will select one of the extension techniques and follow its application in consultation with the course advisor. At the end of the semester, they will submit the report.

**Analytical tools (to be used):** Not required

**Financial requirements:** Provision of material for use of selected extension techniques and provision of transport facilities upto target rout destination, will have to made.

**Information proforma:** Concerned Course Adviser of the college will develop the appropriate proforma be used by the students.

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**Course No.** : ABM-4723  
**Title** : Study and Management of Agrotourism Centres  
**Credit** : 10=0+10
Objective

1. To enlist the various types of Agrotourism centers in the jurisdiction through survey along with facilities there in.
2. To examine the various resources required for management and running of an agrotourism center.
3. To estimate the cost of management of Agrotourism center and determine the returns from the business.
4. To analysis the perceptions of tourists towards the center.

Programme: The students will select specific group of Agrotourism centers from among the surveys they have made. They will collect the data throughout course of the study regarding number and type of tourists arriving, their demands, peak period, their interaction, resources available at center etc. For this, he may take help of Government Tourism Corporation for understanding some of concepts of Agrotourism. At end, he will prepare the report of the project by highlighting all the aspect specified in the project objectives.

Financial requirement: The provision for visit to various Agrotourism centers will have to be made by the institution or providing travelling allowance to students.

Analytical tools (to be used): Standard project cost concepts, financial feasibility parameters like, B: C ratio, IRR and PBP etc.

Information Proforma: The specific information proforma will be supplied to the students.
B: Optional Courses

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>MKT-4713</td>
<td>Agricultural Export Procedures and Exim Policies</td>
<td>3=0+3</td>
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</table>

**Agricultural export procedure:** Selection of proper commodities for export. Backward linkages in production areas for achieving desired exportable produce.

**Mode of export:** Individual, through group, through private exporters, through corporations or through Govt. agencies.

**Export documentation:** Licensing, primary documents required for exports from different agencies. Export Promotion Councils and their role.

**EXIM policies:** Past and present Exim policies, canalisation, quota permit system, tariffs, trade barriers etc.

**Reference Books**

2. Central and State Government Resolutions and Circulars issue from time to time.

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<tbody>
<tr>
<td>MKT-4714</td>
<td>Demand Forecasting, Price Analysis and Future Trading</td>
<td>3=0+3</td>
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</table>

Price analysis: Component of time series analysis. Trend, seasonal, cyclical and irregular fluctuations. Different methods for analysis of time series price, data, index numbers and moving average, etc. Future Trading: Importance, working and relevance in the present context.

Reference Books


3. Visit to the commodity Exchange Market in the jurisdiction.

**Course No.: MKT-4715**

**Title**: Supply Chain Management (SCM)

**Credit**: 3=0+3

Meaning, importance. Models of Supply Chain Management (SCM). Buying plans. Issues in distribution, location of depot, transport, routine inventory management. Use of IT (Information Technology) in SCM. Case studies of selected Agri-business firms.

**Reference Books**


**Course No.: MKT-4716**

**Title**: Retail Management of Agricultural Products

**Credit**: 2=0+2

Retailing concept. Types of retailers- Departmental stores, Super markets, Factory outlets, etc. Non-store retailing. Marketing decisions. Retail organizations-Cooperative chain stores,
voluntary chains, co-operatives, franchises etc. Studies of existing retailing stores in the locality.

**Reference Books**


**Course No.** : MKT-4717

**Title** : Marketing of Aromatic, Medicinal Plants and Spices

**Credit** : 2=0+2

Recent entry of aromatic and medicinal plants in the marketing system. Traditional marketing of agricultural produce versus marketing of aromatic and medicinal plants, spices. Role of contract farming and pre-harvest contractors in the marketing of aromatic and medicinal plants and spices. Survey of cultivators, merchants, middlemen, processors involved in the trade of aromatic and medicinal plants, spices. Detailed study of marketing of selected aromatic and medicinal plants and spices.

**Reference Books**


**Course No.** : MKT-4718

**Title** : Management of Kiosks

**Credit** : 2=0+2


**Reference Books**
Recent research articles related to e-commerce and information technology books.

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<tr>
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<tbody>
<tr>
<td>Title</td>
<td>Marketing of Organically Produced Commodities</td>
</tr>
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<td>Credit</td>
<td>2=0+2</td>
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**Reference Books**


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<th>Course No.</th>
<th>ABM-4724</th>
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<tr>
<td>Title</td>
<td>Management of Agro service Centers</td>
</tr>
<tr>
<td>Credit</td>
<td>3=0+3</td>
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Concept of agro service centres. Location, selection of agro-service centres. Services to be rendered including input supply, consultancy services etc. Backward linkages in procurement of agricultural inputs, technical know-how etc.

**Reference Books**


<table>
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<tr>
<th>Course No.</th>
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<tr>
<td>Title</td>
<td>Agricultural Finance Proposals and Management</td>
</tr>
<tr>
<td>Credit</td>
<td>2=0+2</td>
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</tbody>
</table>
Types of agricultural finance institutes—co-operatives, commercial, Government etc. Types of agricultural credits (Short, medium and long terms) and other types (based on purpose, mortgage, etc.) loans. Different types of agricultural finance proposals: Crop loans, Livestock/Dairy development loans, Purchase of agricultural machineries etc. Study of documents required for various agricultural finance proposals. Examination of various loan proposals sanctioned by various financing institutions etc. Study of monitoring and supervision of these credit/loans sanctioned by the institutions.

Reference Books

Course No. : ABM-4726
Title : Group Sale Management
Credit : 2=0+2

Concept of ‘Group sales’ and comparison with cooperative marketing societies. Advantages and disadvantages of Group sales. Agricultural produce sold through group sale e.g. grapes, banana, pomegranate, vegetables etc. Study of functioning of selected samples of Group sales. Problems, feedbacks of these groups with regard to their activities etc.

Reference Books
Recent research articles related to Group Sale Management.
Kapoor, D. C. Marketing and Sale Management. S. Chand and Co., Ltd.,7361, Ram Nagar, Qutab Road, New Delhi-110 055.
Bhattacharyya, S. K. Logistics Management. S. Chand and Co., Ltd.,7361, Ram Nagar, Qutab Road, New Delhi-110 055.
### Course No. : ABM-4727

**Title** : Contract Farming Management  
**Credit** : 2=0+2


**Reference Books**


### Course No. : ABM-4728

**Title** : Natural Resources, Economics and Market Management  
**Credit** : 3=0+3

Natural resources and their use in agriculture. Development and conservation of natural resources. Management of various natural resources e.g. water management, land management, forest preservation etc. Study of natural resources and ecological balance.

**Reference Books**


### Course No. : ABM-4729

**Title** : Project Formulation, Evaluation and Monitoring  
**Credit** : 2=0+2
Identification of proper agricultural projects e.g. Polyhouse for cut-flowers, sericulture, poultry, dairy, oil extraction, rice or dal mills, fruit processing unit for case study. Preparation of project plan. Cost components and their estimation. Technical and financial evaluation of project through various parameters/indicators, viz; B: C ratio, pay-back period, IRR etc. Methods followed in monitoring of the project. Case studies of selected agricultural projects with reference to economic indicators.

Reference Books


Course No. : EXTN-472
Title : Agricultural Journalism
Credit : 3=0+3


Reference Books

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