



**Rayat Shikshan Sanstha's
Sadguru Gadage Maharaj College,**

**Karad
(Autonomous)**

**Syllabus Under Autonomy
For
B.Voc. I & II (Agriculture)**

Academic Year 2022 - 2023

SADGURU GADAGE MAHARAJ COLLEGE, KARAD
STRUCTURE AND SYLLABUS OF B.VOC.
Bachelor of Vocation (B. Voc.) – Agriculture

TITLE : B.Voc.(Agriculture)
Syllabus (Semester Pattern)
Under Faculty of Interdisciplinary Studies

YEAR OF IMPLEMENTATION : Syllabus will be implemented from August 2021

DURATION : B. Voc. Part I, II and III (Three Years)
B. Voc. Part I - Diploma (One Year)
B. Voc. Part II - Advanced Diploma (Second Year)
B. Voc. Part III – Degree (Third Year)

PATTERN OF EXAMINATION : Semester Pattern

- **Theory Examination** – At the end of semester as per college Rules
- **Practical Examination** – i) In the 1st, 3rd and 5th semester of B. Voc. there will be internal assessment of practical record, related reports submission and project reports at the end of semester.
ii) In the second semester of B. Voc. I, there will be internal practical examination at the end of semester.
iii) In the 4th and 6th semester of B. Voc. there will be external practical examination at the end of semester.

MEDIUM OF INSTRUCTION : English

STRUCTURE OF COURSE : B. Voc. Part – I, II and III
Two Semester Per Year
Two General Papers per year / semester
Three Vocational Papers per Year / Semester
Practical papers per Year / Semester
One Project / Industry Visit / Study Tour / Survey

SCHEME OF EXAMINATION

A) THEORY

- The theory examination shall be at the end of the each semester.
- All the general theory papers shall carry 40 marks and all vocational theory papers shall carry 50 marks.
- Evaluation of the performance of the students in theory shall be on the basis of semester examination as mentioned above.
- Question paper will be set in the view of entire syllabus preferably covering each unit of the syllabus.

- **Nature of question paper for Theory examination** (Excluding Business Communication Paper) –

There will be seven questions carrying equalmarks.

- i. Students will have to solve any five questions.
 - Q. No. 1 : Short answer type question with internal choice (Two out of Three)
 - Q. No. 2 to Q. No. 6 : Long answer type questions
 - Q. No. 7 : Short Notes with internal choice (Two out of Three)

B)PRACTICAL

Evaluation of the performance of the students in practical shall be on the basis of semester examination (Internal assessment at the end of Semester I, II and III and V and external examination at the end of Semester IV and VI as mentioned separately in each paper.

Standard of Passing :

As per the guidelines and rules for B. Voc. (Attached Separately – Annexure I)

Structure of the Course

Preparing for an interview Presenting documents Language used in an interview

Scheme of Teaching :

B. Voc. – I (Diploma) Semester – I

Sr. No	Paper No.	Title	Theory /Practical /Project	Marks	Distribution of Marks		Credits	
					Theory	Practical	Theory	Practical
1	I	Business Communication – I	Theory /Practical	50	40	10	3	2
2	II	Soil Science - I	Theory /Practical	50	40	10	3	2
3	III	Fundamentals of Agronomy	Theory	50	50	--	3	
4	IV	Weed Management	Theory	50	50	--	3	
5	V	Fundamentals of Horticulture	Theory	50	50	--	3	
6	VI	Laboratory Work : Fundamentals of Agronomy	Practical		--	50		3
7	VII	Laboratory Work: Weed Management	Practical		--	50		3
8	VIII	Laboratory Work : Fundamentals of Horticulture	Practical		--	50		3
9	IX	Project	-		--	50		2

Sr. No.	Paper No.	Title	Theory /Practical /Project	Marks	Distribution of Marks		Credits	
					Theory	Practical	Theory	Practical
1	X	Business Communication - II	Theory /Practical	50	40	10	3	2
2	XI	Soil Science - II	Theory /Practical	50	40	10	3	2
3	XII	Agricultural Metrology	Theory	50	50	--	3	
4	XIII	Pomology	Theory	50	50	--	3	
5	XIV	Entomology and Pathology	Theory	50	50	--	3	
6	XV	Laboratory Work : Agricultural Metrology	Practical		--	50		3
7	XVI	Laboratory Work: Pomology	Practical		--	50		3
8	XVII	Laboratory Work : Entomology and Pathology	Practical		--	50		3
9	XVIII	Study Tour	-		--	50		2

B. Voc. – Part I (Diploma) Semester – I

Sr. No.	Paper No.	Title	Distribution of Workload (Per Week)		
			Theory	Practical	Total
1	I	Business Communication – I	4	2	6
2	II	Soil Science - I	4	2	6
3	III	Fundamentals of Agronomy	4	-	4
4	IV	Weed Management	4	-	4
5	V	Fundamentals of Horticulture	4	-	4
6	VI	Laboratory Work : Fundamentals of Agronomy	-	4	4
7	VII	Laboratory Work: Weed Management	-	4	4
8	VIII	Laboratory Work : Fundamentals of Horticulture	-	4	4
9	IX	Project	-	-	-
		Total --	20	16	36

B. Voc. – Part I (Diploma) Semester – II

Sr. No.	Paper No.	Title	Distribution of Workload (Per Week)		
			Theory	Practical	Total
1	X	Business Communication - II	4	2	6
2	XI	Soil Science - II	4	2	6
3	XII	Agricultural Metrology	4	-	4
4	XIII	Pomology	4	-	4
5	XIV	Entomology and Pathology	4	-	4
6	XV	Laboratory Work : Agricultural Metrology	-	4	4
7	XVI	Laboratory Work: Pomology	-	4	4
8	XVII	Laboratory Work : Entomology and Pathology	-	4	4
9	XVIII	Study Tour	-	-	-
		Total-	20	16	36

Eligibility for Admission : 10 + 2 from any faculty or equivalent Diploma /Advanced Diploma in any related stream.

Eligibility for Faculty : 1) M. Sc.(Agri., Horti, Agri. Economics, Plant Pathology, Agri. Engineering, Agri. Extension)with NET / SET/Ph.D.
2) M. A (English) with NET/SET for BusinessCommunication

Eligibilityfor:

LaboratoryAssistant B.Sc.(Agri)/ Diploma in Agriculture

Staffing Pattern:

Teaching:

- a) In 1st Year of B. Voc. - 1 Full Time and 1 Part Time Lecturer and 1 CHB Lecturer for BusinessCommunication
- b) In 2nd Year of B. Voc. – Total requirement of faculty (Inclusive of 1st Year) will be 3 Full time and 1 CHB Lecturer for Financial Accounting 1 CHB Lecturer for Business Communication
- c) In 3rd Year of B. Voc. – Total requirement of faculty (Inclusive of 1st & 2nd Year) will be 4 Full time and 1 part time and 1 CHB Lecturer for Business Communication,

Lab Assistant: For 1st Year of B. Voc. - 1 Parttime

For 2nd and 3rd Year (Inclusive of 1st Year) of B. Voc. – 1 Full Time

SADGURU GADAGE MAHARAJ COLLEGE, KARAD

B. Voc. Part – I Agriculture

Semester I - Paper – I

Business Communication-I

Work Load-6

Theory – 4 Lectures/Week

Practical –2Lectures/Week/Batch of 20 student

Total Marks –50

Theory - 40Marks

Practical – 10Marks

Theory-

Sr. No	Topic	Lecture
1	Business Vocabulary: Vocabulary for banking, marketing and for maintaining public relations	1
2	What is a sentence? Element of a Sentence	1
3	Types of sentence: Simple, compound, complex	2
4	Structure of a letter of application for various posts CV/ Resume and its essentials	2
5	Presenting information /data using graphics like tables, pie charts, tree diagrams, bar diagrams, graphs, flowcharts	2
6	Dos and don'ts of an interview	1
7	Preparing for an interview	1
8	Presenting documents	1
9	Language used in an interview	1

Practical: Based on the theory units

10 Marks.

Reference Books:

Sethi, Anjanee & Bhavana Adhikari. *Business Communication*. NewDelhi: TataMcGrawHill

Tickoo, Champa & Jaya Sasikumar. *Writing with a Purpose*. NewYork: OUP,1979.

Sonie, SubhashC. *Masteringthe Artof Effective Business Communication*. NewDelhi: Student Aid Publication, 2008.

Herekar, Praksh. *Business Communication*.Pune: Mehta Publications, 2007.

Herekar, Praksh. *Principals of Business Communication*.Pune: Mehta Publications, 2003.

Rai, Urmila & S. M. Rai. *Business Communication* .Himalaya Publishing House, 2007. Pradhan, N.S.

Business Communication. Mumbai: HimalayaPublishingHouse,2005.

Pardeshi,P.C.*Managerial Communication*. Pune: NiraliPrakashan,2008.

Pattern of a Question Paper
B. Voc. Part-I
Semester-I Paper: I
Business Communication-I

Time:2hours

Total Marks:40

- | | | |
|-----|--|----|
| Q.1 | Do as directed. Question items on Unit 1 to be asked.
(10 out of 12) | 10 |
| Q.2 | Write a letter of application. | 10 |
| | OR | |
| | Draft a CV/ Resume for a particular post. | |
| Q.3 | Present given information or data using table/chart/pie diagram, etc
(Any one diagram to be drawn.) | 10 |
| Q.4 | Fill in the blanks in the given interview. | 10 |

Practical Evaluation:

10 Marks

Oral and Presentation based on the units prescribed.

Semester I - Paper – II
Soil Science - I

Work Load-6
Theory – 4 Lectures/Week
Practical – 2 Lectures/Week/Batch

Total Marks – 50
Theory - 40 Marks
Practical – 10 Marks

Objectives :

- To enable students to-
 - 1) To understand the formation of soil.
 - 2) To know the various properties of soil.

Course content :

Theory-

Sr. No	Topic	Lecture
1	History and development of soil science, its scope and importance, soil as natural body.	1
2	Soil genesis: Soil forming rocks and minerals.	1
3	Weathering of Rock and Minerals.	2
4	Process and factors of soil formation	2
5	Soil profile, components of soil.	1
6	Soil physical properties: soil texture, structure, density and porosity.	2
7	Soil colour, consistency and plasticity.	1
8	Soil reaction: pH. soil acidity and alkalinity, buffering capacity, effect of soil pH on nutrient availability.	2
9	Soil colloids: soil colloidal properties, inorganic and organic colloids.	2
10	Soil organic matter: sources, composition, properties, factors affecting SOM, its importance and influence on soil properties.	1
11	Humic substances – nature and properties	1
12	Soil organism: macro and micro organism, their beneficial and harmful effect on soil and plant.	1

Practicals:

Experiment	Topic
1	Study of soil forming minerals.
2	Study of soil forming rocks.
3	Determination of soil colour by Munsell soil colour chart in field.
4	Study of soil sampling tools, collection of representative soil sample.
5	Determination of soil texture feel/bouyoucos method.
6	Determination of soil pH and electrical conductivity of soil.
7	Study of soil profile in field.
8	Estimation of organic carbon and organic matter content in soil by walkely and black method.

References :

1. A Text Book of Soil Science – Indian Society of Soil Science
2. ICAR.2006. *Hand book of Agriculture*, ICAR, New Delhi.

Scheme of Internal Practical Evaluation

10 marks

1) Submission of Record book

5marks

2) Viva-Voce

5marks

B. Voc. Part – I
Agriculture
Semester I

Paper No. III: Fundamentals of Agronomy

Work Load–4

Total Marks –50

Theory – 4 Lectures / Week

Objectives:

To enable student –

- 1) To acquire knowledge of Agronomy.
- 2) to know the importance of seed, plant nutrients and irrigation to crops.

Course content :

Theory-

Sr. No	Topic	Lecture
1	Agronomy, its definition, Scope and importance.	1
2	Seed, its definition, characteristics of quality seed, seed treatment, types of seed treatment.	1
3	Tillage, its definition, objective of tillage, type of tillage, tillage implements.	2
4	Sowing and crop density, implement.	1
5	Role of plant nutrient in crop production, importance of manures and fertilizer and its classification.	
6	Method and time of application of manures, fertilizer and green manuring	1
7	Nutrient use efficiency, meaning and factor affecting nutrient use efficiency.	1
8	Definition of Irrigation and Water Management, its objectives and Role of water in plant	1
9	Water resources India and Maharashtra: type of water resources.	1
10	Soil – water – plant Relationship.	1
11	Water requirement of different Agronomic crop	1
12	Criteria for scheduling of irrigation, Method of irrigation, advantages & disadvantages.	1
13	Water quality parameter, water logging, Causes of water logging.	1

References:

1. De, G.C.1989.*Fundamentals of Agronomy*. Oxford & IBH Publishing Co., New Delhi.
2. ICAR.2006. *Hand book of Agriculture*, ICAR, New Delhi.
3. Reddy.T.Y and Reddy, G.H.S.1995.*Principles of Agronomy*, Kalyani Publishers, Ludhiana.
4. Manures and Fertilizers- K. S. Yawalkar, J. P. Agrawal and S. Bokde

B. Voc. Part – I
Agriculture
Semester I

Paper No. IV: Weed Management

Work Load-4

Total Marks –50

Theory – 4 Lectures / Week

Objectives:

To enable students –

- 1) To study the weeds and acquaint with management.
- 2) To know the crop rotation and signs of maturity of crops.

Course content:

Theory:

Sr. No	Topic	Lecture
1	Introduction and importance of weed: weeds, its definition, Characteristics of weeds	1
2	Classification of weed.	1
3	Damage caused by weed.	1
4	Meaning of Crop weed competition and its period in different crop.	1
5	Principle and method of weed management Viz., cultural, mechanical, chemical, biological weed control method.	1
6	Classification of herbicide	1
7	Bio herbicide and their application in Agriculture	1
8	Herbicide instrumentation and their use	1
9	Concept of adjuvant and surfactants.	1
10	Spraying equipment and types	1

References

1. Havlin, J. L., Beaton, J. D., Tisdale, S.L., and Nelsothn, W.L. 2006. *Soil Fertility and Fertilizers: An Introduction to Nutrient Management* (7 ed.). Pearson Education, Delhi.
2. ICAR.2006. *Hand book of Agriculture*, ICAR, New Delhi.
3. De, G.C.1989.*Fundamentals of Agronomy*. Oxford & IBH Publishing Co., New Delhi.
4. Balasubramaniyan, P and Palaniappan, S.P. 2001. *Principles and Practices of Agronomy* AgroBios(India)Ltd., Jodhpur.

B. Voc. Part – I
Agriculture
Semester I
Paper No. V: Fundamentals of Horticulture

Total Marks – 50

Work Load - 4

Theory – 4 Lectures / Week

Objectives:

To enable students –

- 1) To understand orchard management.
- 2) To know the various operations carried out in orchard.
- 3) To study the medicinal and aromatic plants.

Course content :

Theory

Sr. No	Topic	Lecture
1	Horticulture: Its definition and branches, importance and scope.	1
2	Horticultural and botanical classification, fruit zone of Maharashtra and India.	1
3	Climate and soil for horticultural crop.	1
4	Plant propagation – methods and propagation structures: Cutting, Layering, Budding & Grafting.	1
5	Principle of orchard establishment.	1
6	Orchard Management	1
7	Method planning and layout.	1
8	Principle and method of Training and Pruning, juvenility and flower bud differentiation, Unfruitfulness, Pollination, pollinizers and pollinators.	1
9	Intercultural practices: Bending, Notching, Girdling.	
9	Medicinal plants: aloe, Belladonna.	1
10	Aromatic plants: Davana, Lemongrass.	1
11	Use of plant – growth regulator in horticultural crops.	1
12	Spices and Condiments Important and their types.	2

References :

1. Denixon, RI. 1979. *Principles of Horticulture*. Mac Millan, New York.
2. Hartmann, HT. and Kester, DE. 1986. *Plant propagation - Principles and practices*. Prentice-Hall, New Delhi.
3. Chadha, K. L. 2003. Handbook of Horticulture, ICAR, New Delhi. Choudhury, B. 1983. Vegetables. National Book Trust, New Delhi.

B. Voc. Part – I
Agriculture
Semester I

Paper No. VI: Laboratory work (Fundamentals of Agronomy)

Work Load-4

Total Marks –50

Practical – 4 Lectures /Week /Batch

Practical:

Experiment	Topic
1	Identification of seed and crop plants.
2	Identification of different tillage implements.
3	Study of Agro climatic zones of Maharashtra and India.
4	Study of Primary tillage implements.
5	Study of Secondary tillage implements.
6	Calculation of plant population, seed rate for different field crops.
7	Determination of purity and germination percentage of seed, Methods of seed germination.
8	Study of viability test and practice of seed treatment in different field crops.
9	Study of yield contributing characters and yield estimation in different field crop.

Scheme of practical evaluation

Internal practical evaluation

50marks

- | | | |
|------|------------------|----------|
| i) | Long questions | 20 marks |
| ii) | Objectives | 20 marks |
| iii) | Practical record | 5 marks |
| Iv | Viva – voce | 5 marks |

B. Voc. Part – I
Agriculture
Semester I

Paper No. VII: Laboratory Work (Weed Management)

Work Load-4

Total Marks –50

Practical – 4 Lectures /Week /Batch

Practical:

Experiment	Topic
1	Identification of weeds.
2	Study of herbicides relation to Agrochemicals.
3	Method of herbicide and its application.
4	Herbicides application equipments and their calibration.
5	Computation of different weed indices.
6	Care takes of while applying herbicides.
7	Biology of important weeds.
8	Weed control its efficiency and index.

Scheme of practical evaluation

Internal practical evaluation

50marks

- | | |
|----------------------|----------|
| i) Weed album | 10 marks |
| ii) Objective | 20 marks |
| iii) Long question | 10 marks |
| iv) Practical record | 5 marks |
| v) Viva | 5 marks |

B. Voc. Part – I
Agriculture
Semester I

Paper No. VIII: Laboratory Work (Fundamentals of Horticulture)

Work Load-4

Total Marks –50

Practical – 4 Lectures/Week/Batch

Practical:

Experiment	Topic
1	Identification of garden tools.
2	Identification of horticultural crops.
3	Preparation of seed bed/ nursery bed.
4	Practice of sexual method of propagation.
5	Practice of asexual methods of propagation – Cutting and Budding.
6	Practice of asexual methods of propagation – Grafting and Layering.
7	Layout and planting of orchard plants.
8	Training and pruning of trees.
9	Preparation of potting mixture, potting and repotting.
10	Fertilizer application in different crops.
11	Preparation of Growth regulators : Auxins, Gibberellins, Cytokinins
12	Visits of commercial nurseries

Scheme of practical evaluation

Internal practical evaluation

50marks

- | | | |
|------|-------------------------------------|----------|
| i) | Long question | 15 marks |
| ii) | Objective | 20 marks |
| iii) | Visit report | 5 marks |
| iv) | Submission of practical record book | 5 marks |
| v) | Viva – voce | 5 marks |

SADGURU GADAGE MAHARAJ COLLEGE, KARAD

B. Voc. Part – I

Agriculture

Semester–II

Paper : X Business Communication-II

Total Work load: 06 lectures per week of 60mins.

Work Load-6

Theory – 4 Lectures/Week

Practical –2Lectures/Week/Batch of 20 student

Total Marks –50

Theory - 40Marks

Practical – 10Marks

Theory-

Sr. No	Topic	Lecture
1	Preparing for a Group Discussion; Initiating a Discussion; Eliciting Opinions, Views, etc.	2
2	Expressing Agreement/ Disagreement	1
3	Making Suggestions; Accepting and Declining Suggestions; Summing up.	2
4	Writing Memos, Emails, complaints, inquiries, etc	2
5	Inviting Quotations; Placing Orders, Tenders, etc.	2
6	Business Negotiations; Agenda for Negotiation; Stages of Negotiation	1
7	Describing/ Explaining a Product/Service; Promotion of a product; Dealing/ bargaining with Customers	1
8	Marketing a Product/ Service: Using Pamphlets, Hoardings, Advertisement, Public Function/ Festival	2

Practical: Based on the theory units

ReferenceBooks:

Herekar, Praksh. *Business Communication*.Pune: Mehta Publications, 2007.

Herekar,Praksh. *Principals of Business Communication*. Pune: Mehta Publications, 2003

John, David. *Group Discussions*.New Delhi: Arihant Publications.

Kumar,Varinder. *Business Communication*. NewDelhi: Kalyani Publishers, 2000

Pardeshi, P.C. *Managerial Communication*.Pune: Nirali Prakashan, 2008.

Pradhan, N. S. *Business Communication*. Mumbai: Himalaya Publishing House, 2005
 Rai, Urmila & S. M. Rai. *Business Communication*. Mumbai: Himalaya Publishing House, 2007.
 Sethi, Anjane & Bhavana Adhikari. *Business Communication*. New Delhi: Tata McGraw Hill.
 Sonie, Subhash C. *Mastering the Art of Effective Business Communication*. New Delhi: Student Aid Publication, 2008.
 Tickoo, Champa & Jaya Sasikumar. *Writing with a Purpose*. New York: OUP, 1979.
 Whitehead, Jeffrey & David H. Whitehead. *Business Correspondence*. Allahabad: Wheeler Publishing, 1996.

Pattern of a Question Paper
B. Voc. Part-I Business Communication-II
Semester-II Paper: X

Time: 2 hours

Total Marks: 40

- | | |
|--|----|
| Q. 1 Fill in the blanks in the following Group Discussion.
(On Unit 5) (10 out of 12) | 10 |
| Q. 2 Attempt ANY ONE of the following (A or B):
(On Unit 6) | 10 |
| Q. 3 Fill in the blanks with appropriate responses:
(On Unit 7) | 10 |
| Q. 4 Attempt ANY ONE of the following (A or B):
(On Unit 8) (10 out of 12) | 10 |

Practical Evaluation:

10 Marks

Oral and Presentation based on the units prescribed.

Semester II
Paper – XI : Soil Science - II

Work Load - 6

Total Marks –50

Theory – 4 Lectures/Week

Theory - 40Marks

Practical –2 Lectures/Week/Batch

Practical – 10Marks

Course Content:

Theory :

Sr. No.	Topic	Lecture
1	Soil as a source of plant nutrient, essential and beneficial nutrient and their role.	1
2	Define Manures, Introduction and importance of organic manures.	1
3	Definition, properties and Classification of bulky and concentrated organic manures.	2
4	Integrated nutrient management; concept, components and importance.	1
5	Fertilizer; Definition and their classification; Nitrogen fertilizers: classification, manufacturing process and properties.	1
6	Phosphatic fertilizers, manufacturing process and properties, classification.	1
7	Potassic fertilizers: classification, manufacturing process, properties.	1
8	Secondary fertilizers: their types and properties.	1
9	Micronutrient fertilizers: their types and properties.	1
10	Vermicomposting, green manuring: types, advantages and disadvantages.	2

Practical :

Experiment	Topic
1	Principle and application of colorimetry.
2	Principle and application flame photometry.
3	Estimation of organic carbon in soil.
4	Estimation of alkaline hydrolysable N in soil.
5	Estimation of available phosphorus in soil.
6	Estimation of available potassium in soil.

References:

1. A Text Book of Soil Science – Endian Society of Soil Science
2. ICAR.2006. *Hand book of Agriculture*, ICAR, New Delhi.

Scheme of Internal Practical Evaluation

1. Submission of Recordbook
2. Viva-Voce

10 marks

5marks

5marks

B. Voc. Part – I
Agriculture
Semester II
Paper No. XII: Agricultural Metrology

Work Load–4

Total Marks –50

Theory – 4 Lectures / Week

Objectives:

To enable student –

1. To acquire knowledge of weather element.
2. To study the weather forecasting.
3. To study the effect of weather elements on crop growth.

Course content:

Theory:

Sr. No.	Topic	Lecture
1	Meaning and scope of Agricultural Meteorology.	1
2	Earth's atmosphere – its composition, extent and structure; atmospheric weather variables.	2
3	Weather its meaning and components of weather: formation of dew, fog, mist, frosts, cloud.	2
4	Precipitation- process of precipitation, types of precipitation such as rain, snow, sleet and hail.	1
5	Agriculture weather hazard - drought, floods, frost.	1
6	Agriculture and weather relations.	1
7	Weather forecasting its meaning – types of weather forecast and their uses.	1
8	Climate change, climatic variability, global warming, causes of climate change and its impact on regional and national agriculture.	2
9	Impact of weather element on crop.	1

Reference:

1. De, G.C.1989.*Fundamentals of Agronomy*. Oxford & IBH Publishing Co., New Delhi.
2. ICAR.2006. *Hand book of Agriculture*, ICAR, New Delhi.
3. Reddy.T.Y and Reddy, G.H.S.1995.*Principles of Agronomy*, Kalyani Publishers, Ludhiana.
4. Manures and Fertilizers- K. S. Yawalkar, J. P. Agrawal and S. Bokde

B. Voc. Part – I
Agriculture
Semester II
Paper No. XIII : Pomology

Work Load-4
 Theory – 4 Lectures / Week

Total Marks –50

Objectives:

To enable students –

- 1) To study the cultivation practices of fruit crops.
- 2) To study the propagation methods in fruit crops.

Course Content:

Theory:

Sr. No.	Topic	Lecture
1	Definition, Importance and scope of fruit and plantation crop industry in India.	1
	Cultivation of major fruit crop:	
2	Production technologies for the cultivation of: Mango & Banana.	2
3	Production technologies for the cultivation of: Citrus & Grape.	2
4	Production technologies for the cultivation of: Guava & Papaya	2
5	Production technologies for the cultivation of: Sapota, Custard apple and Aonla.	2
	Cultivation of minor fruit crop:	
6	Production technologies for the cultivation of: Ber & Pomegranate.	2
7	Production technologies for the cultivation of: Tamarind, Strawberry & jackfruit.	2
	Cultivation of Nut crops; plantation crop:	
8	Production technologies for the cultivation of: Coconut, Cashewnut & Arecanut.	2

Reference:

1. Denixon, RI. 1979. *Principles of Horticulture*. Mac Millan, New York.
2. Hartmann, HT. and Kester, DE.1986.*Plant propagation - Principles and practices*.Prentice-Hall, New Delhi.
3. Chadha, K. L. 2003. Handbook of Horticulture, ICAR, New Delhi.Choudhury, B.1983. Vegetables. National Book Trust, New Delhi.

B. Voc. Part – I
Agriculture
Semester II

Paper No. XIV : Fundamental of Insectology and Plant pathology.

Work Load – 4Total

Marks – 50

Theory – 4 Lectures / Week

Objectives:

To enable students –

1. To study the insect pest and their control.
2. To study the causes of diseases.

Course Content:

Theory:

Sr. No.	Topic	Lecture
1	Introduction and history entomology in india. Defination: Insect, Entomology and Agril. Entomology.	1
2	Body segmentation: structure of head, thorax and abdomen.	1
3	Structure and modification (with examples) of insect antennae, mouth part, legs and wings.	1
4	Types of larve and pupa with examples.	1
5	Definition of pest, pest surveillence and its types and pest forecasting. Categories of pests.	1
6	Natural and Applied pest control. IPM – introduction, importance, scope, concept, principles.	1
7	Chemical control – importance, hazard and limitations. Classification of insecticide, toxicity and formulations.	2
8	Recent method of pest control. Repellants, antifeedants, hormones, attractants, gamma radiation and genetic control.	1
9	Defination of plant pathology, importance of plant diseases, scope and objective of plant pathology.	1
10	Classification of plant diseases.	1
11	Causes of Plant Diseases Biotic and Abiotic causes.	1
12	Symptoms of plant diseases.	1
13	Principle and method of plant diseases management.	1

References:

0. Mani, M. S. 1968. General Entomology. Oxford and IBH Publishing Company, New Delhi.
1. Pedigo, L. P. 1999. Entomology and Pest Management. Third Edition. Prentice Hall, New Jersey, USA.
2. Dhaliwal, G. S. and Ramesh Arora. 1998. Principles of Insect Pest Management. Kalyani Publishers, New Delhi.
3. Principles of Plant Pathology – R.S. Singh

B. Voc. Part – I
Agriculture
Semester II-Paper

No. XV Laboratory work (Agricultural Metrology)

Work Load-4

Total Marks –50

Practical – 4 Lectures/Week/Batch

Practicals:

Experiment	Topic
1	Visit of Agrometeorological Observatory.
2	Instruments and weather data recording.
3	Measurement of air temperatures, its tabulation and variation.
4	Measurement of soil temperature.
5	Measurement of rainfall.
6	Measurement of wind speed and wind direction.
7	Measurement of evaporation.
8	Measurement of sunshine duration.
9	Measurement of solar intensity.
10	Measurement of Relative Humidity.

Scheme of practical evaluation

Internal practical examination	50marks
i) Long question	10 marks
ii) Identification and use	20 marks
iii) Submission of visit report	10marks
iv) Practical record book.	5 marks
v) Viva–Voce	5 marks

B. Voc. Part – I
Agriculture
Semester II

Paper No. XVI Laboratory Work (Pomology)

Work Load-4
Practical – 4 Lectures/Week/Batch

Total Marks –50

Practicals:

Experiment	Topic
1	Seed propagation.
2	Scarification and stratification of seeds.
3	Propagation method for fruit crops including Micro-propagation.
4	Propagation method for plantation crops including Micro-propagation.
5	Description and identification of fruits crops.
6	Description and identification of plantation crops.
7	Preparation of plant bio regulators and their uses.
8	Intercropping and multistoried cropping.
9	Pests of above fruit and plantation crops.
10	Diseases of above fruit and plantation crops.
11	Physiological disorder of above fruit and plantation crops.
12	Visit of commercial orchard fruit and plantation crops.

Scheme of practical evaluation

Internal practical examination

50marks

- | | |
|---------------------------------|----------|
| i) Long question | 10 marks |
| ii) Spotting | 20 marks |
| iii) Submission of visit report | 10marks |
| iv) Practical record book | 5 marks |
| v) Viva–Voce | 5 marks |

B. Voc. Part – I
Agriculture
Semester II

Paper No. XVII Laboratory Work (Entomology and Pathology)

Work Load-4

Total Marks –50

Practical – 4 Lectures/Week/Batch

Practicals:

Experiment	Topic
1	Methods of collection and preservation of insect and including immature stages.
2	External feature of typical insect (e.g. Cockroach/grasshoppers) structure of head, thorax and abdomen.
3	Types of larvae and pupa.
4	Study and dissection of available insect.
5	Chemical control - insecticide and their formulations.
6	Collection and preservation of disease specimen.
7	Isolation and purification of fungi (VAM)
8	Study of different various plant diseases.
9	Study of fungicide and their formulations.

Scheme of practical evaluation

Internal practical examination	50marks
i) Long question	15marks
ii) Collection of insect	10 marks
iii) Dissection & description	10 marks
iv) Practical record book	5 marks
v) Viva–Voce	5 marks
vi) Tour report	5 marks