


 Estd. 1962 "A ⁺⁺ " Accredited by NAAC (2021) With CGPA 3.52	SHIVAJI UNIVERSITY, KOLHAPUR 416 004, MAHARASHTRA PHONE : EPABX - 2609000, BOS Section - 0231-2609094, 2609487 Web : www.unishivaji.ac.in Email: bos@unishivaji.ac.in शिवाजी विद्यापीठ, कोल्हापूर, ४१६ ००४, महाराष्ट्र दूरध्वनी - इपीबीएक्स - २०६०९०००, अभ्यासमंडळे विभाग : ०२३१- २६०९०९४. २६०९४८७ वेबसाईट : www.unishivaji.ac.in ईमेल : bos@unishivaji.ac.in	 
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Ref.: SU/BOS/Voc./508

Date: 10- 09- 2024

To,

The Principals,
 All Concerned Affiliated Colleges /Institutions.
 Shivaji University, Kolhapur.

**Subject : Regarding syllabi of B. Voc. Part III Courses under the Faculty of
 Inter-Disciplinary Studies as per National Education Policy, 2020. (1.0)**

Sir/Madam,

With reference to the subject, mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the syllabi of B.Voc. Part III Courses under the Faculty of Inter-Disciplinary Studies. as per National Education Policy, 2020. (1.0)

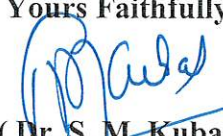
1	B.Voc. in Tourism and Service Industry
2	B.Voc. in Sustainable Agriculture Management
3	B.Voc. in Nutrition and Dietetics
4	B.Voc. in Nursing and Hospital Management
5	B.Voc. in Building Technology & Interior Design
6	B.Voc. in Agriculture
7	B.Voc. in Printing & Publishing
8	B.Voc. in Sustainable Agriculture
9	B.Voc. in Graphic Design
10	B.Voc. in Automobile

This syllabi shall be implemented from the academic year 2024-2025 onwards. A soft copy containing the syllabi is attached herewith and it is also available on university website www.unishivaji.ac.in. (NEP-2020@suk / Online Syllabus)

You are, therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours Faithfully


 (Dr. S. M. Kubal)
 Dy Registrar

Copy to:

1	The Dean, Faculty of IDS	6	Affiliation T. 1 & T. 2 Section
2	Director, Board of Examination and Evaluation	7	P.G.Admission Section
3	The Chairman, Respective Board of Studies	8	Appointment A & B Section
4	All On Exam Section <i>O.E.I Section</i>	9	P.G.Seminar Section
5	Eligibility Section	10	Computer Centre /I.T.cell

SHIVAJI UNIVERSITY, KOLHAPUR



Accredited by NAAC with „A++“ Grade

**Faculty of Interdisciplinary Studies
Structure, Scheme and Syllabus for
Bachelor of Vocation (B. Voc.)**

**Agriculture
Part III- Sem. V & VI**

**NEP 2020 PATTERN
Syllabus to be implemented from**

(Subject to the modifications that will be made from time to time)
Syllabus to be implemented from June 2024 onwards.

**With Multiple Entry and Multiple Exit Option
(To be implemented from the Academic Year 2024-25)**

Semester V- Duration: 6 Months											
Sr. No	Teaching Scheme				Evaluation Scheme						
	Course	No. of Lectures		Hours (T+P)	Credits	Theory	Internal/ Practical	Total Marks	Min Marks (Separate Passing)	Exam Duration (Hrs.)	
		T	P							T	P
1.	AECC-E	4	2	6	4	40	10	50	18	2	-
2.	GEC-E	4	2	6	4	40	10	50	18	2	-
3.	DSC-E-I	4	-	4	4	50	-	50	18	2	-
4.	DSC-E-II	4	-	4	4	50	-	50	18	2	-
5.	DSC-E-III	4	-	4	4	50	-	50	18	2	-
6.	SEC-E-I	-	4	4	2	-	50	50	18	-	3
7.	SEC-E-II	-	4	4	2	-	50	50	18	-	3
8.	SEC-E-III	-	4	4	2	-	50	50	18	-	3
9.	SEC-E-IV	-	-	2	2	-	50	50	18	-	-
	Total	20	14	36	28	230	220	450	-	-	-

Semester VI- Duration: 6 Months											
Sr. No	Teaching Scheme				Evaluation Scheme						
	Course	No. of Lectures		Hours (T+P)	Credits	Theory	Internal/ Practical	Total Marks	Min Marks (Separate Passing)	Exam Duration (Hrs.)	
		T	P							T	P
1.	AECC-F	4	2	6	4	40	10	50	18	2	-
2.	GEC-F	4	2	6	4	40	10	50	18	2	-
3.	DSC-F-I	4	-	4	4	50	-	50	18	2	-
4.	DSC-F-II	4	-	4	4	50	-	50	18	2	-
5.	DSC-F-III	4	-	4	4	50	-	50	18	2	-
6.	SEC-F-I	-	4	4	2	-	50	50	18	-	3
7.	SEC-F-II	-	4	4	2	-	50	50	18	-	3
8.	SEC-F-III	-	4	4	2	-	50	50	18	-	3
9.	SEC-F-IV	-	-	2	2	-	50	50	18	-	-
	Total	20	14	36	28	230	220	450	-	-	-

Semester V – Duration: 6 Months		
Sr.No.	Course	Subject Name
1.	AECC-E	Business Communication in English-III
2.	GEC-E	Seed Technology
3.	DSC-E-I	Organic farming and Sustainable Agriculture
4.	DSC-E-II	PHM and Value Addition of Fruits and Vegetables
5.	DSC-E-III	Crop physiology
6.	SEC-E-I	Laboratory Work : Organic farming and Sustainable Agriculture
7.	SEC-E-II	Laboratory Work: PHM and Value Addition of Fruits and Vegetables
8.	SEC-E-III	Laboratory Work : Crop physiology
9.	SEC-E-IV	Project

Semester VI – Duration: 6 Months		
Sr.No.	Course	Subject Name
1.	AECC-F	Business Communication in English-IV
2.	GEC-F	Agricultural Economics and Extension
3.	DSC-F-I	Farming system and Watershed Management
4.	DSC-F-II	Spices, Condiments, Aromatic and Medicinal plants
5.	DSC-F-III	Agriculture Engineering
6.	SEC-F-I	Laboratory Work : Farming system and Watershed Management
7.	SEC-F-II	Laboratory Work: Spices, Condiments, Aromatic and Medicinal plants
8.	SEC-F-III	Laboratory Work : Agriculture Engineering
9.	SEC-F-IV	Study Tour

• Student Contact Hrs Per Week	• Total Marks for B.Voc.-Degree:900
• Theory and Practical Lectures:48 Minutes Each	• Total Credits for B.Voc.-Degree:56
• AECC: Ability Enhancement Compulsory Course	
• Practical Workload will for batch of 20 students	
• Practical Examination will be conducted Semester wise for 50 Marks per course	
• DSC: Discipline Specific Core Course-Candidate can opt three Courses (Subjects) from DSC.	
• GEC: Generic Elective Compulsory Course- Candidate can opt any one Course(Subject).	
• There shall be separate passing for theory and practical courses.	
AECC & GEC Internal Evaluation should be done at college or respective department level.	
• SEC-E & SEC-F are two parts of Vocational Degree Course	

Eligibility:

Eligibility for Admission : Advanced Diploma

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 Business Communication
3) M. Com. With NET/SET/Ph.D. for Fundamentals of Financial Accounting.

Eligibility for Laboratory Assistant: B.Sc. (Agri) / Diploma in Agriculture

Staffing Pattern:

Teaching:

One full time Assistant Professor (on purely contract basis) for three years and four visiting faculties should be appointed on the basis of workload and requirement of the subject. One CHB lecture for Business Communication and One CHB lecturer for Financial Accounting.

Lab Assistant: For 1st Year of B. Voc. - 1 Part time For 2nd and 3rd Year (Inclusive of 1st Year) of B. Voc. – 1 Full Time

**Bachelor of Vocation (B. Voc.) Part – III Sem.-V
(AECC-E)**

Paper No – XXXVII : Business Communication in English-III

Work Load-6

Theory – 4 Lectures/Week

Practical – 2 Lectures/Week/Batch

Total Marks – 50

Theory – 40 Marks

Practical – 10 Marks

Units Prescribed for Theory: 40 Marks.

Course Outcomes: The students will acquire knowledge of:

1. To develop awareness of the complexity of the communication process
2. To develop effective listening skills in students so as to enable them to comprehend instructions and become a critical listener
3. To develop effective oral skills so as to enable students to speak confidently interpersonally as well as in large groups
4. To develop effective writing skills so as enable students to write in a clear, concise, persuasive and audience centered manner
5. To develop ability to communicate effectively with the help of electronic media.

Content of syllabus:

Unit–I: Concept of Communication

(15 Hrs)

Meaning, Definition, Process, Need, Feedback, Emergence of Communication as a key concept in the Corporate and Global world

Unit – II Impact of technological advancements on Communication

(15 Hrs)

Types- Internet, Blogs, E-mails, Moodle, Social media (Facebook, Tweeter & WhatsApp)
Advantages and Disadvantages

Unit – III Problems in Communication

(15 Hrs)

Physical/ Semantic/Language / Socio-Cultural / Psychological / Barriers Ways to Overcome these Barriers

Unit – IV Listening Skills

(15 Hrs)

Importance of Listening Skills, Obstacles to listening, cultivating good Listening Skills

Practical: Based on the theory units:

Marks: 10

Books Recommended: (List of Minimum 5 Books)

1. Agarwal, Anju D (1989) A Practical Handbook for Consumers, IBH.
2. Alien, R.K. (1970) Organisational Management through Communication.
3. Ashley, A (1992) A Handbook of Commercial Correspondence, Oxford University Press.
4. Aswal thapa, K (1991) Organisational Behaviour, Himalayan Publication, Mumbai.
5. Atreya N and Guha (1994) Effective Credit Management, MMC School of Management.

Note: (If any - such as

1. In theory examination, the weightage to numerical problems should not exceed 30%.
2. Students can use scientific calculators in theory examination.

Pattern of a Question Paper
B. Voc. Part-III Semester –V

Business Communication in English -III (AECC-E)

Paper No: XXXVII

Time: 2 hours

Total Marks: 40

Q.1 Do as directed questions items on unit 1 to be asked 10 (10 out of 12)

Q.2 Write a letter of application 10

OR

Draft a CV / Resume for a particular post 10

Q.3 Present a given information or a data using a table/ chart/pie diagram, etc. 10
(any one diagram to be drawn)

Q.4 Fill in the blanks in the given interview 10
Practical Evaluation:

Oral and presentation based on units prescribed 10 Marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-V
Generic Elective Compulsory Course (GEC-E)
Paper – XXXVIII : Seed Technology

Work Load-6

Theory – 4 Lectures/Week

Practical – 2 Lectures/Week/Batch

Total Marks – 50

Theory - 40 Marks

Practical – 10 Marks

Units Prescribed for Theory: 40 Marks

Course Outcomes:

- To enable students-
 - 2) To study the seed production of cereals, pulses and oil seed crops
 - 3) To study the drying, processing, testing and treatments of seed

Course Content:

Theory –

Unit I – Seed and seed technology

Introduction, definition, importance, losses of crop varieties and their control, characters of good quality seed, maintenance of genetic purity during seed production and seed quality.

Unit II – Study of different classes of seeds

Foundation seed, certified seed, nuclear seed, breeder seed, seed certification, phases of certification, procedure for seed certification, field inspection and seed act.

Unit III – Seed production of cereals, pulses, oil seeds, fodder and vegetable crops

Introduction, seeds and sowing, soil and climate, varieties, major pests and diseases, special cultivation practices, threshing, harvesting and storage.

Unit IV – Post harvest practices of seed production

Seed drying, processing, testing for quality assessment, seed treatment, method of application, seed packing, seed storage, major pests and diseases during storage and seed marketing.

Practical-

- ❖ Seed production in cereals (bajra, maize, sorghum).
- ❖ Seed production in pulses (green gram, pea, gram).
- ❖ Seed production in oil seeds (groundnut, soybean).
- ❖ Seed sampling and testing (purity, germination, viability).
- ❖ Visit to seed production plot.

References:

1. R.L. Agrawal, Seed technology, Oxford and IBH Publishing company, New Delhi.
2. Phundan Singh, Principle of seed technology, Kalyani Publication, New Delhi.
3. Dahiya, B. S and Rai, K.N, 1997, Seed technology, Kalyani publication, New Delhi

Scheme of Internal Practical Evaluation

1. Submission of Record book

2. Viva–Voce

10 marks

5marks

5marks

Pattern of a Question Paper

B. Voc. Part-III Semester –V

Seed Technology

Paper No: XXXVIII

Time: 2 hours

Total Marks: 40

Solve any five questions from the following.

Q. 1 Multiple choice Question	08 Marks
Q. 2 Long answer Question	08 Marks
Q. 3 Long answer Question	08 Marks
Q. 4 Long answer Question	08 Marks
Q. 5 Long answer Question	08 Marks
Q. 6 Long answer Question	08 Marks
Q. 7 Short Type Questions (any 2 out of 3)	08 Marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-V
Discipline Specific Core Course (DSC-E-I)

Paper No- XXXIX: Organic Farming and Sustainable Agriculture

Work Load–4

Total Marks –50

Theory – 4 Lectures / Week

Units Prescribed for Theory: 50 Marks

Course Outcomes:

To enable student –

- 1) To acquire knowledge of practices of organic farming and sustainable agriculture.
- 2) To know the importance of organic farming and sustainable agriculture.

Course content:

Theory-

Unit I – Principle and Scope of Organic Farming

Introduction, scope, advantages and disadvantages of organic farming, Initiative taken by govt., NGO's and other organizations.

Unit II – Components and methods of organic farming

Components of organic farming, organic manures and methods of organic manure production (Vermi-compost, compost, FYM, green manure, bio-fertilizer, sewage, sludge and night soil), Certification process and standards of organic farming.

Unit III – Principles, scope and introduction of sustainable agriculture

Introduction, advantages and disadvantages, difference between modern and sustainable agriculture and problems of modern agriculture.

Unit IV – Sustainable agriculture - problems and its indicators.

Indicators of sustainability, adaptation and mitigation, conservation agriculture strategies in agriculture, HEIA, LEIA and LEISA and its techniques for sustainability.

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.),
2. Pearson Education, ICAR 2006, *Handbook 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* Agro Bios (India) Ltd., Jodhpur.

Pattern of a Question Paper

B. Voc. Part-III Semester –V

Organic Farming and Sustainable Agriculture

Paper No: XXXIX

Time: 2 hours

Total Marks: 50

Solve any five questions from the following.

Q. 1 Multiple choice Question	10 Marks
Q. 2 Long answer Question	10 Marks
Q. 3 Long answer Question	10 Marks
Q. 4 Long answer Question	10 Marks
Q. 5 Long answer Question	10 Marks
Q. 6 Long answer Question	10 Marks
Q.7 Short Type Questions (any 2 out of 3)	10 Marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-V
Discipline Specific Core Course (DSC-E-II)

Paper No. XXXX: PHM and Value Addition of Fruits and Vegetables

Work Load-4

Total Marks –50

Theory – 4 Lectures / Week

Units Prescribed for Theory: 50 Marks

Course Outcomes:

To enable students –

- 1) To study the post harvest management practices of fruit crops.
- 2) To study the value addition of fruits and vegetable.

Course Content:

Unit I – History, factors, introduction and importance of PHM

History, pre-harvest factors (Cultural operations, pre harvest treatment and maturity indices), post-harvest factors (Curing, degreening, pre-cooling, disinfection, waxing, ripening, packaging, transportation, storage and irradiation)

Unit II – Post harvest management of horticultural crops

Potato, tuber crops, Cassava, Sweet potato, Cut flowers, Coconut, Leafy vegetable, Spices and other horticultural crops

Unit III – Introduction and Concept of value addition

Introduction, scope, concept, importance of value addition, principle and methods of preservation.

Unit IV – Processing of fruits and vegetables

Jam, jelly, marmalade, preserve, candy, fermented and non fermented beverages and tomato products.

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,
4. Choudhury, B. 1983. Vegetables, National Book Trust, New Delhi.

Pattern of a Question Paper

B. Voc. Part-III Semester –V

PHM and Value Addition of Fruits and Vegetables

Paper No: XXXX

Time: 2 hours

Total Marks: 50

Solve any five questions from the following.

Q. 1 Multiple choice Question	10 Marks
Q. 2 Long answer Question	10 Marks
Q. 3 Long answer Question	10 Marks
Q. 4 Long answer Question	10 Marks
Q. 5 Long answer Question	10 Marks
Q. 6 Long answer Question	10 Marks
Q.7 Short Type Questions (any 2 out of 3)	10 Marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-V
Discipline Specific Core Course (DSC-E-III)
Paper No. XXXXI : Crop Physiology

Work Load – 4Total
Theory – 4 Lectures / Week

Marks – 50

Units Prescribed for Theory: 50 Marks

Course Outcomes:

To enable students –

1. To study the plant water relationship.
2. To study the physiological process in a plant .

Course Content:

Unit I – Plant water relations

Introduction, importance of crop physiology in agriculture, role and significance of water- diffusion, imbibition and osmosis, absorption of water- active and passive absorption and factors affecting absorption, translocation, transpiration and guttation.

Unit II – Photosynthesis and respiration

Photosynthesis, its requirement- light, CO₂, pigments and water, mechanism of photosynthesis, light reaction, cyclic and noncyclic photophosphorylation, photosynthetic pathways- C₃, C₄ and CAM, respiration- glycolysis, TCA and pentose phosphate pathway

Unit III – Nutrient physiology

Mineral nutrition, criteria of essentiality- macro, secondary and micro elements, sand and soil less culture, hydroponics, physiological role of nutrients, foliar nutrition and fertigation

Unit IV – Growth physiology

Growth- growth curve, phases of growth, factors affecting growth, photoperiodism, growth regulators, growth hormones, physiological role of auxins, GA, cytokinins, ethylene and ABA, synthetic growth regulators and their use, application of growth regulators

References:

1. Jain, J.K. 2007, Fundamentals of plant physiology, S. Chand and company Ltd., New Delhi,
2. Pandey, S. N. and Sinha, B. K. 2006, Plant physiology, Vikas publishing house Pvt. Ltd., New Delhi,
3. Purohit, S. S. 2005, Plant Physiology, student edition, Jodhpur.
4. Devlin, R. M, Plant physiology, 4 th edition, CBS publishers and distributors, New Delhi.
5. Mallick, C. P., Srivastava, A. K. 2000, Text book of plant physiology, Kalyani Publication, New Delhi

Pattern of a Question Paper

B. Voc. Part-III Semester –V

Crop Physiology

Paper No: XXXXI

Time: 2 hours

Total Marks: 50

Solve any five questions from the following.

Q. 1 Multiple choice Question	10 Marks
Q. 2 Long answer Question	10 Marks
Q. 3 Long answer Question	10 Marks
Q. 4 Long answer Question	10 Marks
Q. 5 Long answer Question	10 Marks
Q. 6 Long answer Question	10 Marks
Q.7 Short Type Questions (any 2 out of 3)	10 Marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-V
Skill Enhancement Courses (SEC-E-I)
Paper No. XXXXII : Laboratory work: Organic Farming and Sustainable
Agriculture

Work Load-4

Total Marks –50

Practical – 4 Lectures /Week/Batch

Practicals :

1. Visit of organic farms to study the various components and their utilization.
2. Preparation of compost and their methods.
3. Preparation of vermi-compost and their methods.
4. To study the biofertilizers.
5. To study the green manuring crops.
6. To study the sustainable agriculture problems and its impact on agriculture.

Scheme of practical evaluation

Internal practical evaluation	50 marks
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- | | |
|----------------------------------|----------|
| 1. Identify the Specimen | 10 marks |
| a) | |
| b) | |
| 2. Draw the Diagram | 10 marks |
| a) | |
| b) | |
| 3. Answer the Following question | 10 marks |
| a) | |
| b) | |
| 4. Field Work | 10 marks |
| 5. Journal and Viva-voce | 10 marks |

Bachelor of Vocation (B. Voc.) Part – III Sem.-V
Skill Enhancement Courses (SEC-E-II)

Paper No. XXXXIII : Laboratory work: PHM and Value Addition of Fruits and Vegetables

Work Load-4

Total Marks –50

Practical – 4 Lectures/Week/Batch

Practicals :

1. Applications and use of different types of packaging materials
2. To study the different grades of fruits and vegetables
3. Preparation of RTS, squash, nectar and cordial
4. Preparation of jam and jelly
5. Preparation of marmalade and fruit candy
6. Preparation of tomato sauce and ketchup

Scheme of practical evaluation

Internal practical evaluation

50marks

- | | |
|----------------------------------|----------|
| 1. Identify the Specimen | 10 marks |
| a) | |
| c) | |
| 2. Draw the Diagram | 10 marks |
| c) | |
| d) | |
| 3. Answer the Following question | 10 marks |
| i. | |
| ii. | |
| 4. Field Work | 10 marks |
| 5. Journal and Viva-voce | 10 marks |

Bachelor of Vocation (B. Voc.) Part – III Sem.-V
Skill Enhancement Courses (SEC-E-III)

Paper No. XXXXIV : Laboratory work: Crop Physiology

Work Load-4

Total Marks –50

Practical – 4 Lectures/Week/Batch

Practicals :

1. Study of anatomical structure of plant body
2. Identification of physiological disorder
3. Measurement of leaf area by different methods
4. Measurement of transpiration and study of structure of stomata
5. Study of growth analysis
6. Application of growth regulators to plant

Scheme of practical evaluation

Internal practical evaluation	50marks
1. Identify the Specimen	10 marks
d)	
e)	
2. Draw the Diagram	10 marks
e)	
f)	
3. Answer the Following question	10 marks
iii.	
iv.	
4. Field Work	10 marks
5. Journal and Viva-voce	10 marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-V
Skill Enhancement Courses (SEC-E-IV)
Paper No. XXXXV : Project

Work Load-4

Total Marks –50

Practical – 4 Lectures/Week/Batch

Students must submit detailed project report related topics on agriculture crop cultivation aspects of cereal, vegetable, fruit, pulses planning including land preparation, seed treatment, sowing, water management,, identification of weeds and weed management, identification of insect pest and control, harvest and post harvest handling of products, storage and marketing of produce etc.

Scheme of practical evaluation

Internal practical evaluation

50 Marks

**Bachelor of Vocation (B. Voc.) Part – III Sem.-VI
(AECC-F)**

Paper – XXXXVI : Business Communication in English –IV

Work Load-6

Theory – 4 Lectures/Week

Practical – 2 Lectures/Week/Batch

Total Marks – 50

Theory - 40 Marks

Practical – 10 Marks

Units Prescribed for Theory: 40 Marks.

Course Outcomes: The students will acquire knowledge of

1. To understand and demonstrate writing and speaking processes through invention, organization, drafting, revision, editing, and presentation.
2. To understand the importance of specifying audience and purpose and to select appropriate communication choices.
3. To understand and appropriately apply modes of expression, i.e., descriptive, expository, narrative, scientific, and self-expressive, in written, visual, and oral communication.
4. To participate effectively in groups with emphasis on listening, reflective thinking, and responding.
5. To develop the ability to research and write a documented paper and/or to give an oral presentation.

Content of syllabus:

Unit-I: Theory of Business Letter Writing

(15 Hrs)

Parts, Structure, Layouts—Full Block, Modified Block, Semi - Block

Principles of Effective Letter Writing, Principles of effective Email Writing

Unit – II Personnel Correspondence

(15 Hrs)

Statement of Purpose

Job Application Letter and Resume, Letter of Acceptance of Job Offer, Letter of Resignation

Unit – III Language and Writing Skills

(15 Hrs)

Paragraph Writing -Developing an idea, using appropriate linking devices, etc. Cohesion and Coherence, self-

editing, etc. [Interpretation of technical data, Composition on a given situation, a short informal report etc.]

Unit – IV Interviews

(15 Hrs)

Preparing for an Interview

Types of Interviews – Selection, Appraisal, Grievance, Exit, Group Discussion

Practical: Based on the theory units:

Marks: 10

Books Recommended: (List of Minimum 5 Books)

1. Bahl, J. C. and Nagamia, S.M. (1974) Modern Business Correspondence and Minute Writing.

2. Balan, K.R. and Rayudu C.S. (1996) Effective Communication, Beacon New Delhi.
3. Basu, C.R. (1998) Business Organisation and Management, T.M.H. New Delhi.
4. Banerjee, Bani P (2005) Foundation of Ethics in Management Excel Books
5. Businessworld Special Collector's Issue: Ethics and the Manager

Note: (If any - such as

1. In theory examination, the weightage to numerical problems should not exceed 30%.
2. Students can use scientific calculators in theory examination.

Business Communication in English -IV (AECC-F)

Total Marks: 40

Q.2 Write a letter of application	10
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Oral and presentation based on units prescribed **10 Marks**

Bachelor of Vocation (B. Voc.) Part – III Sem.-VI
Generic Elective Compulsory Course (GEC-F)

Paper No. XXXXVII : Agricultural Economics and Extension

Work Load-6

Theory – 4 Lectures/Week

Practical – 2 Lectures/Week/Batch

Total Marks – 50

Theory - 40 Marks

Practical – 10 Marks

Units Prescribed for Theory: 40 Marks

Course Outcomes:

To enable students-

1. To study the fundamentals of agricultural economics.
2. To study the production function and marketing of commodities.
3. To study fundamentals of agricultural extension.

Course content:

Unit I – Fundamentals of agric. Economics and financial co-operation

Meaning, scope, subject matter, definitions, of economics, micro and macro economics, basic concept: goods and services, desire, want, demand, utility, cost and price, wealth, capital, income and welfare, Agriculture finance meaning, scope and significance, credit analysis, four “R” and three “C” of credit, introduction to higher financial institution- RBI, NABARD, IMF, RRB, commercial bank, institutional and non institutional sources.

Unit II – Production function and marketing of commodities.

Concept of production function and its type, use of production function in decision making, factor-product, factor-factor, product-product relationship, law of equi-marginal, or principle of opportunity cost, law of comparative advantage, least cost combination, Law of marginal return, elasticity of production, concept, definition of agricultural marketing, market structure, classification and characteristics of agricultural marketing, marketing functionaries and channels, marketing cost, margin and price spread, risk in co-operative marketing, role of government in agriculture marketing and problems in marketing of agriculture commodities.

Unit III – Fundamentals of agriculture extension education

Meaning, definition and types, objectives, principles of extension education, various agriculture development programs launched by ICAR & govt. of India (IADP, HYVP, KVK, IVLP, etc.).

Unit IV – Rural development

Concept, meaning, definition of rural development, various rural development programs launched by govt. of India, Community development, meaning, definition, concept & its principles.

Practical :

- ❖ Study the subject matter of agriculture economics.
- ❖ Analysis of progress and performance of commercial banks and RRBs.
- ❖ Visit to a commercial bank and cooperative bank and cooperative society to acquire firsthand knowledge of their management, schemes and procedures.
- ❖ Determination of cost of cultivation.
- ❖ Computation of marketable and marketed surplus of important commodities.
- ❖ Visit to local market to study various marketing functions performed by different agencies.
- ❖ Identification of marketing channels for selected commodities.
- ❖ Visit to APMC
- ❖ Preparation of extension literature- leaflet, booklet, folder, pamphlet news stories and success stories.
- ❖ Visit to KVK and acquire firsthand knowledge of their management, schemes and crop production technologies.
- ❖ A visit to village to understand the problems being encountered by the villagers/ farmers.

References :

1. Reddy, Subba, S. and Raghuram, 1996, Agricultural finance and management, Oxford IBH, Indian publication house, New Delhi.
2. Reddy, Subba, S. and Raghuram, and Bhavani Devi, 2004, Agricultural economics, Oxford IBH, Indian publication house, New Delhi.
3. Developing entrepreneurship, Asia-Pacific theories and practices ASEED, New Delhi.
4. Hawkins, H. S. and A. W. van den Ban, 1996, Agricultural extension, Second edition Wiley Blackwell publication, Boston.

Scheme of Internal Practical Evaluation

1. Submission of Record book
2. Viva-Voce

10 marks

5marks
5marks

Pattern of a Question Paper

B. Voc. Part-III Semester –VI

Agricultural Economics and Extension

Paper No: XXXXVII

Time: 2 hours

Total Marks: 40

Solve any five questions from the following.

Q. 1 Multiple choice Question	08 Marks
Q. 2 Long answer Question	08 Marks
Q. 3 Long answer Question	08 Marks
Q. 4 Long answer Question	08 Marks
Q. 5 Long answer Question	08 Marks
Q. 6 Long answer Question	08 Marks
Q. 7 Short Type Questions (any 2 out of 3)	08 Marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-VI
Discipline Specific Core Course (DSC-F-I)
Paper No. XXXXVIII : Farming system and watershed management

Work Load–4
Theory – 4 Lectures / Week

Total Marks –50

Units Prescribed for Theory: 50 Marks

Course Outcomes:

To enable student –

- 1) To acquire knowledge of farming system
- 2) To know the importance of watershed management.

Course content:

Unit I- Scope, importance and concept of farming system

Scope, importance, concept, types of farming system, factors affecting types of farming system, components of farming system and their maintains.

Unit II – Study the cropping scheme and pattern

Cropping system and pattern, multiple cropping system, efficient cropping system and their evaluation, allied enterprises and their importance, tools for determining production and efficiencies in cropping and farming system.

Unit III – Rainfed agriculture

Introduction, types, history of rainfed agriculture, problems and prospects of rainfed agriculture in India, soil and climatic conditions in rainfed areas, management of crops in rainfed areas, and drought and its types.

Unit IV – Watershed management practices

Water harvesting, importance, its techniques, efficient utilization of water through soil and crop management practices, contingent crop planning, concept, objective, principle and components of watershed management, factors affecting watershed management.

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. 1995, *Principles of Agronomy*, Kalyani Publishers, New Delhi.
4. K. S. Yawalkar, J. P. Agrawal and S. Bokde, *Manures and Fertilizers*.
5. Cox, G.W and Atkins, M.D. 1979, *Agricultural Ecology: An Analysis of World Food Production Systems*.
6. W.H. Freeman and Company, San Francisco, Grigg, D.B. 1974, *The Agricultural Systems of the World: An Evolutionary Approach*. Cambridge University Press, Cambridge.

Pattern of a Question Paper

B. Voc. Part-III Semester –VI

Farming system and watershed management

Paper No: XXXXVIII

Time: 2 hours

Total Marks: 50

Solve any five questions from the following.

Q. 1 Multiple choice Question	10 Marks
Q. 2 Long answer Question	10 Marks
Q. 3 Long answer Question	10 Marks
Q. 4 Long answer Question	10 Marks
Q. 5 Long answer Question	10 Marks
Q. 6 Long answer Question	10 Marks
Q.7 Short Type Questions (any 2 out of 3)	10 Marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-VI
Discipline Specific Core Course (DSC-F-II)
Paper No. XXXXVIV : Spices, Condiments, Aromatic and
Medicinal plants

Total Marks – 50

Work Load - 4

Theory – 4 Lectures / Week

Units Prescribed for Theory: 50 Marks

Course Outcomes:

To enable students –

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

Course content :

Theory

Unit I - Scope and Importance

Introduction, importance, scope, classification of spices and condiments

Unit II- Plantation practices of spices and condiments

Uses, Botanical distribution, plantation practices, soil and climate, varieties, and harvesting of following crops (Black pepper, Small cardamom, Ginger, Turmeric, Clove, Nutmeg, Cinnamon, Fenugreek, Coriander, Cumin, Chilli.)

Unit III- Scope and Importance of Medicinal and Aromatic plants

Introduction, importance, scope, classification of medicinal and aromatic plants

Unit IV- Plantation practices of Medicinal and Aromatic Plants

Uses, Botanical distribution, plantation practices, soil and climate, varieties, and harvesting of following crops Medicinal (Aloe, Belladonna, Senna, Ashwagandha, Sarpagandha, Safed musali, Neem, Periwinkle,) and Aromatic plants (Davana, Lemon Grass, Rose geranium, Japanese mint, java citronella)

References :

1. Denixon, R. I. 1979, *Principles of Horticulture*, Mac Millan, New York.
2. Hartmann, H. T. and Kester, D.E.1986, *Plant propagation - Principles and practices*, Prentice-Hall, New Delhi.
3. Chadha, K. L. 2003, *Handbook of Horticulture*, ICAR, New Delhi.
4. Choudhury, B.1983, *Vegetables production*, National Book Trust, New Delhi.

Pattern of a Question Paper

B. Voc. Part-III Semester –VI

Spices, Condiments, Aromatic and Medicinal plants

Paper No: XXXXVIV

Time: 2 hours

Total Marks: 50

Solve any five questions from the following.

Q. 1 Multiple choice Question	10 Marks
Q. 2 Long answer Question	10 Marks
Q. 3 Long answer Question	10 Marks
Q. 4 Long answer Question	10 Marks
Q. 5 Long answer Question	10 Marks
Q. 6 Long answer Question	10 Marks
Q.7 Short Type Questions (any 2 out of 3)	10 Marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-VI
Discipline Specific Core Course (DSC-F-III)
Paper No. XXXXX : Agriculture Engineering

Work Load–4
Theory – 4 Lectures / Week

Total Marks –50

Units Prescribed for Theory: 50 Marks

Course Outcomes:

To enable student –

1. To acquire knowledge of soil and water conservation.
2. To study the green house technology.
3. To study the seed drying and processing.

Course content:

Unit I- Study soil and water conservation

Introduction, definition and agents of soil erosion, causes of soil erosion, water erosion, forms of water erosion, gully classification, and control measures, introduction to contouring, strip cropping, contour bund, graded bund and bench terracing, wind erosion, its mechanism, principles of wind erosion and its control measures.

Unit II – Study of green house technology

Introduction, types of green houses, plant responses to green house environment, planning and design of green house, equipments, and materials for construction of traditional and low cost green houses, irrigation system in green houses, cost estimation and economic analysis.

Unit III – Farm power and machineries

Introduction, sources of farm power, IC engine, its working principle, comparison of two stroke and four stroke cycle engine, different components of IC engine, air cleaning, cooling, lubrication, fuel supply and hydraulic control system of tractor engine.

Unit IV – Tools and tillage implements.

Primary and secondary tillage implements, implements for intercultural operation, familiarization with sowing and planting equipments, calibration of seed drill, and solved example, familiarization with plant protection equipments, familiarization with harvesting and threshing equipments.

References:

1. Gurmel Singh, C. Vankataraman, G. and Joshi, P. 1990, Manual and soil and water conservation practices, Oxford And IBH publishing,Co., New Delhi,
2. ICAR 2006, *Hand book of Agriculture*, ICAR, New Delhi.
3. Dhruvanarayana, V. V. 1993, soil and water conservation research in India, ICAR, New Delhi.
4. Lenka, D. 2001, Irrigation and Drainage, Kalyani publishers, New Delhi.
5. Dr. Sahay, J., 2009, Elements of agricultural engineering, Standard publishers distributors, New Delhi.

Pattern of a Question Paper
B. Voc. Part-III Semester –VI
Agriculture Engineering

Paper No: XXXXX

Time: 2 hours

Total Marks: 50

Solve any five questions from the following.

Q. 1 Multiple choice Question	10 Marks
Q. 2 Long answer Question	10 Marks
Q. 3 Long answer Question	10 Marks
Q. 4 Long answer Question	10 Marks
Q. 5 Long answer Question	10 Marks
Q. 6 Long answer Question	10 Marks
Q.7 Short Type Questions (any 2 out of 3)	10 Marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-VI
Skill Enhancement Courses (SEC-F-I)
Paper No. XXXXXI: Farming system and watershed management

Work Load-4

Total Marks –50

Practical – 4 Lectures/Week/Batch

Practicals:

- ❖ To study of cropping scheme
- ❖ Preparation of cropping scheme for irrigated situation
- ❖ Preparation of cropping scheme for dry land situation
- ❖ Study of existing farming system in nearby villages
- ❖ Preparation of integrated farming system model for wet land
- ❖ Preparation of integrated farming system model for irrigated land
- ❖ Preparation of integrated farming system model for dry land
- ❖ Studies on cultural practices for mitigating moisture stress.
- ❖ Field demonstration on soil and moisture conservation measures.
- ❖ Field demonstration on construction of water harvesting structures.
- ❖ Visit to rainfed research station/ water shed.

Scheme of practical evaluation

Internal practical evaluation	50marks
1. Identify the Specimen	10 marks
f)	
g)	
2. Draw the Diagram	10 marks
g)	
h)	
3. Answer the Following question	10 marks
v.	
vi.	
4. Field Work	10 marks
5. Journal and Viva-voce	10 marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-VI
Skill Enhancement Courses (SEC-F-II)
Paper No. XXXXVIV : Laboratory Work Spices, Condiments,
Aromatic and Medicinal plants

Work Load-4

Total Marks –50

Practical – 4 Lectures/Week/Batch

Practicals :

- ❖ Identification of Spice crops and their seeds.
- ❖ Identification of Medicinal crops and their seeds.
- ❖ Identification of Aromatic crops and their seeds.
- ❖ Study of morphological characters of Spice crops.
- ❖ Study of morphological characters of Medicinal crops.
- ❖ Study of morphological characters of Aromatic crops.
- ❖ Fertilizer application methods in Spices and Condiments crops.
- ❖ Fertilizer application methods in Medicinal and aromatic crops.

Scheme of practical evaluation

Internal practical evaluation	50marks
1. Identify the Specimen	10 marks
h)	
i)	
2. Draw the Diagram	10 marks
i)	
j)	
3. Answer the Following question	10 marks
vii.	
viii.	
4. Field Work -----	10 marks
5. Journal and Viva-voce	10 marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-VI
Skill Enhancement Courses (SEC-F-III)
Paper No. XXXXXIII: Laboratory work Agriculture Engineering

Work Load-4

Total Marks –50

Practical – 4 Lectures/Week/Batch

Practicals:

- ❖ Problems and control measures of soil erosion.
- ❖ Problems and control measures of water erosion.
- ❖ Problems and control measures of wind erosion.
- ❖ Study of different types of green houses based on shape.
- ❖ Study of green house equipments.
- ❖ Study of different components of IC engine.
- ❖ Study of air cleaning and cooling system of engine.
- ❖ Study of primary and secondary tillage implements.
- ❖ Study of seed-cum-fertilizer drills, their seed metering mechanism and calibration.
- ❖ Study of different inter cultivation equipments.
- ❖ Study of different types of sprayer and duster.
- ❖ Study of harvesting and threshing machineries.

Scheme of practical evaluation

Internal practical evaluation	50marks
1. Identify the Specimen	10 marks
j)	
k)	
2. Draw the Diagram	10 marks
k)	
l)	
3. Answer the Following question	10 marks
ix.	
x.	
4. Field Work -----	10 marks
5. Journal and Viva-voce	10 marks

Bachelor of Vocation (B. Voc.) Part – III Sem.-VI
Skill Enhancement Courses (SEC-F-IV)
Paper No. XXXXXIV : Tour/RAWE

Work Load-4

Total Marks –50

Practical – 4 Lectures/Week/Batch

Students must submit detailed study tour/RAWE report related topics on industrial, field, KVK , agricultural institute, horticulture nursery and dairy visit or work in agriculture field in a specific manner on a project paper.

Scheme of practical evaluation

Internal practical evaluation

50 Marks