

Annexure: I

**Khandesh College Education Society's
Moolji Jaitha College, Jalgaon**

**An "Autonomous College" Affiliated to
KBC North Maharashtra University, Jalgaon**



SYLLABUS

Agriculture

T.Y.B.Voc.

(Semester V & VI)

[w. e. f. Academic Year: 2021-22]

Bhushan Joshi

T.Y.B.Voc. (Agriculture)

Program Specific Outcomes (PSO)

- This program enables students to attain, by the graduation
 - Operate and troubleshoot the agriculture equipments and necessary machines
 - Ability to perform and co-ordinate the Entrepreneurship development activities, project and supply chain management
 - Co-ordinate and manage the overall agriculture extension services
 - Ability perform activities with the help of soft skills, computer skills, financial skills and management skills

Learning Objectives

- To impart the agricultural skills to the student.
- To make student ready for the job.
- To prepare student with life skills that are required to perform any job.
- To develop practical skills with a sound theoretical background

Exam Pattern

- Each theory and practical course will be of 100 marks comprising of 60 marks external and 40 marks internal examination.

External Theory Examination (60 marks)

- External examination will be of two hours duration for each theory course. There shall be 4 questions each carrying equal marks (15 marks each) while the tentative pattern of question papers shall be as follows;
 - Q1 (A) will be MCQ type question for 5 marks (attempt any 5 out of 7 questions).
 - Q1 (B) will be one line questions for 5 marks (attempt any 5 out of 7 questions).
 - Q2 (A) will be for 12 marks (attempt any 6 out of 8 questions).
 - Q2 (B) is compulsory question for 3 marks.
 - Q3 will be of 15 marks (attempt any 5 out of 7 questions).
 - Q4 will be of 15 marks (attempt any 3 out of 5 questions).

External Practical Examination (60 marks):

- Practical examination shall be conducted by the respective department at the end of the semester. Practical examination will be of minimum 3 hours duration and shall be conducted as per schedule. There shall be 10 marks for *viva-voce*. Certified journal is compulsory to appear for practical examination.

Internal Theory/ Practical Examination (40 marks):

- Internal theory assessment of the student by respective teacher will be comprehensive and continuous, based on written test/ assignment. The written test may comprise of both objective and subjective type questions.
- Internal practical examination should be conducted by respective department as per schedule given. For internal practical examination student should have completed journal. There shall be 10 marks for journal.

Shushan Jwli

T.Y.B.Voc. (Agriculture) NSQF Level VII
(w.e.f. - June 2021)

T. Y. B. Voc. - Agriculture (NSQF Level VII)					
Semester V					
General Education Component					
Paper No.	Paper Code	Paper Title	Mode	Credits	Marks
1	AGR 511	Fundamentals of management	Theory	2	100
2	AGR 512	Elementary Economics for agriculture	Theory	2	100
3	AGR 513	Office Operation Lab III	Practical	4	100
4	AGR 514	Preparation of business plan	Practical	4	100
Total				12	400
Skill Development Component					
5	AGR521	Agriculture extension	Theory	2	100
6	AGR522	Spice and condiments	Theory	2	100
7	AGR523	Complementary Techniques for additional benefits	Theory	2	100
8	AGR524	AGR/Q7601 Agriculture Extension Service Provider	Practical	4	100
9	AGR525	Complementary Techniques for additional benefits	Practical	4	100
10	AGR526	Spice cultivation	Practical	4	100
Total				18	600
Total Credits = General Education Component + Skill Development Component					12+18=30
Semester VI					
General Education Component					
Paper No.	Paper Code	Paper Title	Mode	Credits	Marks
1	AGR 611	Financial accounting	Theory	2	100
2	AGR 612	Project Management & Entrepreneurship Development	Theory	2	100
3	AGR 613	Web literacy lab	Practical	4	100
4	AGR 614	Preparation of project report for green house development	Practical	4	100
Total				12	400
Skill Development Component					
5	AGR 621	Supply Chain Management	Theory	2	100
6	AGR 622	Agriculture marketing	Theory	2	100
7	AGR 623	Farm Machinery and Equipment	Theory	2	100
8	AGR 624	AGR/Q7501 Supply Chain Field Assistant	Practical	4	100
9	AGR 625	Preparation of proposal for export of Agri goods	Practical	4	100
10	AGR 626	Field training	Practical	4	100
Total				18	600
Total Credits = General Education Component + Skill Development Component					12+18=30

T.Y.B.Voc. [Agriculture] syllabus, 2021-22, Moolji Jaitha College (Autonomous), Jalgaon

Bhushan Joshi

T.Y.B.Voc. (Agriculture): Semester-V
AGR 511: Fundamentals of Management

Total Hours: 30

Credits: 2

Course Objectives

- To know about the basics of management
- To know about the planning
- To know the concept directing and controlling

Course outcomes

Students will be able to

- Understand the basics of management
- Understand the process of planning
- Learn the meaning, importance and principles of direction and control

Detailing of the syllabus -

Unit I Introduction

Hours: 06

Definition, Function, Process, scope and principles of management; levels of management; managerial roles, managerial skill and activities; difference between management and administration; values and ethics in management

Unit II Evolution of Management

Hours: 08

Evolution of Management ThouAGR, Approaches of Management ThouAGR, Functions of Management. Management and organization

Unit III Planning

Hours: 08

Planning and Organizing Nature, Scope, Objective and Significance of Planning, Elements and Steps of Planning, Decision Making Organizing Principles, Span of Control, Line and Staff Relationship, Authority, Delegation and Decentralization. Effective Organizing, Organizational Structures, Formal and Informal Organizations, Staffing.

Unit IV Directing and controlling

Hours: 08

Direction- meaning, importance and principles; organization culture, corporate social responsibility; Motivation: Motive characteristic, motivation theories, leadership styles and approaches, control process: nature, need, method, tools and techniques .

References Books:

- **Robbins and Coulter**, Fundamentals of Management **Publisher:** Pearson; 10 edition (7 January 2016) **ISBN-10:** 0134237471, **ISBN-13:** 978-0134237473
- **Grove Andrew**, High Output Management, Vintage; 2nd Vintage Books ed edition (29 August 1995), **ISBN-10:** 9780679762881, **ISBN-13:** 978-0679762881, **ASIN:** 0679762884

Bhuvan Jaschi

- Principles of Management essentials you always wanted to know, Vibrant Publishers; First Edition (4 May 2018), ISBN-10: 1946383937, ISBN-13: 978-1946383938
- **Stephen P. Robbins**, Organizational behaviour, Pearson; EiAGReenth edition (31 October 2018), Sold by: Amazon Asia-Pacific Holdings Private Limited, ASIN: B07TZPRPRM
- **Richard Templar**, The rules of Management, Pearson Education; Fourth edition (30 August 2018), ISBN-10: 9789352862368, ISBN-13: 978-9352862368, ASIN: 9352862368

Teaching methods:

- Classroom teaching, Lecture method, ICT enabled teaching



Rushan Jishi

T.Y.B.Voc. (Agriculture): Semester-V
AGR 512: Elementary Economics for agriculture

Total Hours: 30

Credits: 2

Course Objectives

- To introduce macroeconomics and micro economics
- To know about the cost, price, profits and books of accounts
- To introduce agriculture economics
- To introduce farm management

Course outcomes

Students will be able to

- Understand macro and micro economics at preliminary level
- Learn about cost, price, profits and books of accounts
- Know about agriculture economics at preliminary level
- Learn about the practices of farm management

Detailing of the syllabus -

Unit 1: Introductory Macroeconomics

Hours: 06

National Income and Related Aggregates; Determination of Income and Employment, understanding of Government Budget, Balance of Payments; Human development index; major challenges before Indian economy

Unit 2: Introductory Micro Economics

Hours: 06

Introduction to Micro Economics: Definition, scope and nature of Economics; Theory of Demand and Supply: Meaning and determinants of demand, Law of demand and Elasticity of demand, Price, income and cross elasticity; theory of consumer's behaviour, Meaning and determinants of supply, Law of supply and Elasticity of supply; price determination in different markets

Unit 3: Costs, Price, Profits and Book of Accounts

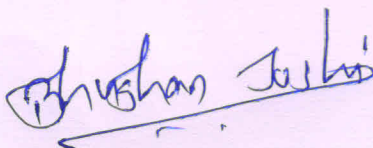
Hours: 06

Analysis of Costs and Costing Strategies; Market structures and Pricing Strategies; Cost Volume-Profit Analysis; Introduction to Financial Statements and Funds Flow Analysis.

Unit 4: Agriculture economics and market survey

Hours: 06

Definition, Nature and scope of agriculture economics; Salient features of Indian Agriculture; importance and factors influencing change in prices, problems and policies; Market survey – Collection of information of identified/potential activity to assess the demand /supply position, market trends, marketing practices, competition, current state of technology etc



Unit 5: Farm management:**Hours: 06**

Meaning and concept, objectives; stages of farm management, elements of farm costing and accounting, corporate farming, collective farming, cooperative farming, Agriculture marketing and finance management

References Books:

- **Case, Karl E., Ray C. Fair and S. Oster** (2014). Principles of Economics, 9th Edition. Pearson Education, New Delhi.
- **Koutsoyiannis, A.** (1979). Modern Microeconomics – 2nd Ed. English Language Book Society, London Samuelson, Paul A. & Nordhaus, William D. (2010). Economics – 19th Ed. Tata McGraw Hill, New Delhi
- **N. Gregory Mankiw**, Economics: Principles and Applications, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007.
- **Joseph E. Stiglitz and Carl E. Walsh**, Economics, W.W. Norton & Company, Inc., New York, International Student Edition, 4th Edition, 2007.
- **Dornbusch, Fischer and Startz**, Macroeconomics, McGraw Hill, 11th edition, 2010.

Teaching methods:

- Classroom teaching, Lecture method, ICT enabled teaching

Ashishan Jeshi

T.Y.B.Voc. (Agriculture): Semester-V
AGR 513: Office operations lab III

Total Hours: 60

Credits: 4

Course Objectives

- To learn different functions in word
- To learn mathematical functions in excel
- To learn the use of statistical functions in excel
- To learn more functions in power point

Course outcomes

Students will be able to

- Use the link in word processing software
- Use the mathematical functions in excel
- Use statistical functions like count, max, average etc
- Apply the custom animation in power point presentation

Detailing of the syllabus -

Sr. No.	Name of Practical	No. of Hours
01	Insert links in word processing software	04
02	Insert equations in word processing software	04
03	Proof the document and Insert comments in word processing software	04
04	Track changes in word processing software	12
05	Insert Object in word processing and spreadsheet software	12
06	Use comparison operators (=, <, >, <=, >=, <>) in spreadsheet software	12
07	Use mathematical functions in spreadsheet software	12
08	Use statistical functions (count, count if, max, min, average, median, mode) in spreadsheet software	12
09	Use logical functions (if, AND, OR) in spreadsheet software	08
10	Use lookup and reference functions (VLOOKUP, HLOOKUP, MATCH, INDEX) in spreadsheet software	12
11	Use financial functions (Compound interest, EMI, CAGR, XIRR, FV) in spreadsheet software	12
12	Apply the custom animation to the text and image by using presentation software	08

Bhushan Jushi

13	Apply the custom animation to the chart by using presentation software	04
14	Set up slide show by using presentation software	04

References Books:

- **Saxena S.** Ms Office 2007 in a Nutshell, 2011, Vikas Publishing House, **ISBN-10: 8125950362**
- **Shrivastava S. S.** (2008). MS-Office. Firewall Media
- **Joyce J. & Moon M.** Microsoft Office Word 2007 Plain & Simple. Microsoft Press
- **Kumar Bittu,** Microsoft Office 2010, V&S Publishers, 2015



Bhushan Joshi

T.Y.B.Voc. (Agriculture): Semester-V
AGR 514: Preparation of business plan

Total Hours: 60

Credits: 4

Course Objectives

- To develop questionnaire as per need
- To do market survey
- To prepare a business plan

Course outcomes

Students will be able to

- To understand process of preparation of questionnaire as per requirement
- Do the market survey and understand the difficulties of it
- To prepare a business plan and present it

Detailing of the syllabus -

Practical

1. Preparation of questionnaire for market survey
2. Market survey for any given product
3. Data arrangement in soft
4. Analysis of data
5. Preparation of business plan
6. Presentation of business plan

References Books:

- **Shelton Hal** , The Secrets to Writing A Successful Business Plan, Summit Valley Press; 2 edition (31 January 2014), ASIN: B00I6S87LW
- **Genadinik Alex**, Business Plan Template and Example: How to Write a Business Plan, Semantic Valley LLC; 5 edition (7 December 2015)
- **Rhonda Abrams**, Successful Business Plan: Secrets & Strategies, Planning Shop; 5 edition (September 16, 2010)
- **Jr. Horan, James T.**, The One Page Business Plan for the Creative Entrepreneur One Page Business Plan Co; 3rd ed. edition (1 March 2004) ISBN-10: 9781891315091
- **Curtis Veechi**, Creating a Business Plan for Dummies Book, For Dummies; 1 edition (February 14, 2014)

Bhushan Jushi

T.Y.B.Voc. (Agriculture): Semester-V
AGR 521: Agriculture Extension

Total Hours: 30

Credits: 02

Course Objectives

- To know extension and its services
- To know rural institutes and its functions
- To know different agricultural development program
- To know about the training

Course outcomes

Students will be able to

- Understand the extension and its importance
- Understand the PRI
- Understand the benefits of different agricultural programs
- Understand the process of training

Detailing of the syllabus -

Unit 1

Hours: 06

Extension Education: - Meaning, definition, concepts, objectives and principles. Agricultural Extension - Meaning, Definition, scope and objectives. Community Development and Integrated Rural Development: - concept, principles and objectives. Role of agricultural extension in different sectors of agriculture and rural development, differences between Community Development and Extension Education

Unit 2

Hours: 06

Understanding of basic rural institutions: Panchayat Raj system - Meaning of democratic decentralization and Panchayat Raj, three tiers of Panchayat Raj system, powers, functions and organizational set up

Unit 3

Hours: 06

Agricultural Extension in the context of enhancing productivity, Quality, Nutrition, post harvest technology, product processing, Profitability, Income and Employment.

Bhushan Jasni

Unit 4**Hours: 06**

Agricultural Development programs with reference to objectives and salient features – Watershed Development Program (WDP), National Agricultural Technology Project (NATP), ATMA, ATIC, NHM, NAIP ; Social Justice and Poverty Alleviation Programs - Integrated Tribal Development Program (ITDP), Integrated Rural Development Program (IRDP), Swarna Jayanthi Gram Swarojgar Yojana (SGSY), Prime Minister Employment Yojana (PMEY). Integrated Child Development Scheme (ICDS) and Mahila Samridhi Yojana (MSY), Mahila Arthik Vikas Mahamandal (MAVIM).

Unit 5**Hours: 06**

Training and development of human resources; Identifying training needs and assessment of training impact; Training – principles, importance, methods and factors. Phases of training - pre training and post training

Reference Books

- **Dahama, O.P. and O.P. Bhatnagar.** Education and Communication for Development. Oxford and IBH Publishing Co., New Delhi.
- Directorate of Extension: Extension Education in Community Development. Govt. of India. Delhi.
- **Ray, G.L.** Extension Communication and Management. Naya Prakash, Kolkata.
- **Sandhu, A. S.** Text Book on Agricultural Communication Process and Methods. Oxford and IBH Publishing Pvt. Ltd., New Delhi.
- **Singh, Katar.** Rural Development – Principle, Policy and Management. Sage Publication, New Delhi. **Swanson B.I.** (Ed.) (1997). Agricultural Extension – A Reference Manual. FAO, Rome.
- **Thyagrajan, M.** (1982). Project Management through Network Techniques (PERT, CPM) Indian Institute of Public Administration, New Delhi.

Teaching methods:

- Classroom teaching, Lecture method, ICT enabled teaching

Bhushan Joshi

T.Y.B.Voc. (Agriculture): Semester-V
AGR 522: Spice and condiments

Total Hours: 30

Credits: 02

Course Objectives

- To know about spice and condiments in general
- To know about soil fertility in context to cultivation of spice and condiments
- To know about the all cultivation practices of few spice and condiments

Course outcomes

Students will be able to

- Get preliminary knowledge of spices and condiments
- Learn the cultivation practices of selected spice and condiments
- Understand the harvest and post harvest operations of spice and condiments

Detailing of the syllabus -

Unit 1: Spice and condiments

Hours: 06

Definition, classification and importance of spice and condiments; cultivation of some important Indian spices and condiments in relation to agro-climatic conditions required for spices cultivation; the state farmers' right under PPV&FRA Act 2001 (9 rights)

Unit 2: Seed and seedlings

Hours: 06

Seed selection and seedling production in selected spices and condiments; seed selection criteria for chilies and seedling preparation

Unit 3: Soil fertility and water management

Hours: 06

Soil fertility management in spice and condiments crops; Nutrient requirement for the spices and condiments cultivation; Use of the bio fertilizer/organic manure/ vermicompost in the cultivation of spice and condiments crops; water requirement for the cultivation of spice and condiments crops

Unit 4: Integrated Pest and Diseases Management

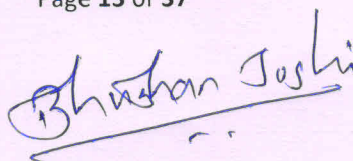
Hours: 06

Major pests and disease in spice and condiments crops; character and life cycle of different insect pests; the life stages of plants at which it is vulnerable to pests and diseases, symptoms of and precautionary measures to be adopted; Practise integrated pest and disease management-mechanical, biological and chemical methods; the national and international standards on pesticide residues for spices and condiments

Unit 5: Harvest and post-harvest

Hours: 06

Harvest and post-harvest indices of spices and condiments; quality assurance mechanism; harvest and post-harvest operations in and spices and condiments.



Reference books:

- **Norman Jill**, The complete book of spices The Complete Book of Spices: A Practical Guide to Spices and Aromatic Seeds, 1995 Studio Publisher
- **Kumar N**, Introduction to spices plantation crops Medicinal and Aromatic Plants 2nd Edition 2017 Oxford & IBH Publishing
- **Padma Laxmi**, The Encyclopaedia of Spices and Herbs: An Essential Guide to the Flavours of the World, Ecco Publisher 2016
- **Bansil P C**, Spices and Medicinal Plants Economics of Agricultural Commodities, CBS Publication, 2014

Teaching methods:

- Classroom teaching, Lecture method, ICT enabled teaching



Abhishek Joshi

T.Y.B.Voc. (Agriculture): Semester-V

AGR 523: Complementary techniques for additional benefits

Total Hours: 30

Credits: 02

Course Objectives

- To know complementary techniques
- To know the importance and advantages of biofertilizers
- To know different types of biofertilizers
- To know about the hydroponic technique

Course outcomes

Students will be able to

- Understand the complementary techniques
- Understand the importance and advantages of biofertilizers
- Understand the benefits of different types of biofertilizers
- Understand the process of hydroponic technique

Detailing of the syllabus -

Unit 1:

Introduction, definition, importance and advantages of bio-fertilizer, types and functions, method of application, constraints in bio-fertilizer

Hours: 06

Unit 2:

General account of the microbes used as biofertilizer: isolation, identification, mass multiplication, carrier-based inoculants: - Rhizobium, Az spirillum, Azotobacterial; Actinorhizal symbiosis.

Hours: 06

Unit 3:

Cyanobacteria (blue green algae), Azolla and Anabaena azollae association, nitrogen fixation, factors affecting growth, blue green algae and Azolla in rice cultivation. Mycorrhizal association: types, taxonomy, occurrence and distribution, phosphorus nutrition

Hours: 06

Unit 4:

Green manuring and mulching: different types, methods, advantages, source of nutrients from green manure; bio-dynamics

Hours: 06

Unit 5:

Hydroponic technique: Introduction, definition, different types of hydroponics; Advantages and disadvantages of hydroponics, crops suitable for hydroponics; study different growing media; different techniques of hydroponics media in hydroponics

Hours: 06

Reference Books:

Phubhan Joshi

- **Eiri Board**, “Hand Book Of Biofertilizers & Vermiculture”, 2009, Engineers India Research Institute, ISBN: 978-8189765019
- **Shalini Suri**, “Biofertilizer and Biopesticide”, 2011, Aph Publishing Corporation, ISBN: 978-8131311042
- **Reeta Khosla**, “Biofertilizers and Biocontrol Agents for Organic Farming”, 1st Edition, 2017, Kojo Press, ISBN: 9788192756790
- **R. Shankara Reddy**, “Biofertilizer technology “, 1st Edition, 2012, Akhand Publishing House, ISBN: 978-9381416129
- **Channabasava A., H. C. Lakshman**, “Biofertilizers and Biopesticides”, 2014, Pointer Publishers, ISBN: 9788171327751

Teaching methods:

- Classroom teaching, Lecture method, ICT enabled teaching



Dhruvan Joshi

T.Y.B.Voc. (Agriculture): Semester-V

AGR 524: Agriculture Extension Service Provider (AGR/Q7601)

Total Hours: 60

Credits: 4

Course Objectives

- To know Agriculture extension
- To know the importance of extension services
- To know different types of extension services
- To know about the linkages in extension activities

Course outcomes

Students will be able to

- Understand the Agriculture extension
- Understand the importance of extension services
- Understand the different types of extension services
- Understand the process of linkages in extension activities

Detailing of the syllabus -

1. AGR/N7601 – Plan for the extension services
2. AGR/N7602 - Identify location specify of agricultural technology
3. AGR/N7603 - Make frontline demonstrations
4. AGR/N7604 – Provide training to farmers
5. AGR/N7605 – Assist with backward and forward linkages

Reference Books

- **Dahama, O.P. and O.P. Bhatnagar.** Education and Communication for Development. Oxford and IBH Publishing Co., New Delhi.
- Directorate of Extension: Extension Education in Community Development. Govt. of India. Delhi.
- **Ray, G.L.** Extension Communication and Management. Naya Prakash, Kolkata.
- **Sandhu, A. S.** Text Book on Agricultural Communication Process and Methods. Oxford and IBH Publishing Pvt. Ltd., New Delhi.
- **Singh, Katar.** Rural Development – Principle, Policy and Management. Sage Publication, New Delhi. Swanson B.I. (Ed.) (1997). Agricultural Extension – A Reference Manual. FAO, Rome.
- **Thyagrajan, M.** (1982). Project Management through Network Techniques (PERT, CPM) Indian Institute of Public Administration, New Delhi.

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Abhinav Jushi

T.Y.B.Voc. (Agriculture): Semester-V
AGR 525: Complementary Techniques for additional benefits

Total Hours: 60

Credits: 04

Course Objectives

- To know complementary techniques
- To know the importance and advantages of biofertilizers
- To know different types of biofertilizers
- To know about the hydroponic technique

Course outcomes

Students will be able to

- Understand the complementary techniques
- Understand the importance and advantages of biofertilizers
- Understand the benefits of different types of biofertilizers
- Understand the process of hydroponic technique

Detailing of the syllabus -

Practical

A: Hydroponics:

- Calculation of available nutrient from the given fertilizer
- Preparation of Growing medium / Nutrient solution
- Preparation of prototype for deep water cultivation
- Preparation of prototype for aeroponic
- Cultivation of vegetables using hydroponic method

B: Biofertilizers production method for:

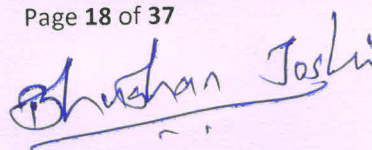
- Azatobactor,
- Trichoderma and
- Rhizobium

Reference Books:

- **Eiri Board**, "Hand Book Of Biofertilizers & Vermiculture", 2009, Engineers India Research Institute, ISBN: 978-8189765019
- **Shalini Suri**, "Biofertilizer and Biopesticide", 2011, Aph Publishing Corporation, ISBN: 978-8131311042
- **Reeta Khosla**, "Biofertilizers and Biocontrol Agents for Organic Farming", 1st Edition, 2017, Kojo Press, ISBN: 9788192756790
- **R. Shankara Reddy**, "Biofertilizer technology", 1st Edition, 2012, Akhand Publishing House, ISBN: 978-9381416129
- **Channabasava A., H. C. Lakshman**, "Biofertilizers and Biopesticides", 2014, Pointer Publishers, ISBN: 9788171327751

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T.Y.B.Voc. (Agriculture): Semester-V

AGR 526: Spice Cultivation

Total Hours: 60

Credits: 04

Course Objectives

- To know cultivation techniques
- To know the importance and advantages of Spices
- To know different types of spices
- To know about the spices cultivation

Course outcomes

Students will be able to

- Understand the cultivation techniques
- Understand the importance and advantages of Spices
- Understand the benefits of different types of spices
- Understand the process of spice cultivation

Detailing of the syllabus -

Practical:

1. Preparation of inventory of some important spice crops with their uses.
2. Field cultivation of spice crops - chilly, garlic, ginger, onion (any 2 of them).
3. Study nutrient requirement of spice crops at different growth stages.
4. Use of biofertilizers in spice cultivation to enhance yield.
5. Identification and collection of different pests their damage and control measure in spices.
6. Identification and collection of different disease samples their damage and control measure in spices.
7. Study of INM/IPM in spice crops.
8. Project report on cultivation to marketing of spice crop.
9. Field visit
10. Case study of any crop from seedling preparation to harvest

Reference books:

- **Norman Jill**, The complete book of spices The Complete Book of Spices: A Practical Guide to Spices and Aromatic Seeds, 1995 Studio Publisher
- **Kumar N**, Introduction to spices plantation crops Medicinal and Aromatic Plants 2nd Edition 2017 Oxford & IBH Publishing
- **Padma Laxmi**, The Encyclopaedia of Spices and Herbs: An Essential Guide to the Flavours of the World, Ecco Publisher 2016
- **Bansil P C**, Spices and Medicinal Plants Economics of Agricultural Commodities, CBS Publication, 2014

Shushan Jashi

T.Y.B.Voc. (Agriculture): Semester-VI

Semester VI					
General Education Component					
Paper No.	Paper Code	Paper Title	Mode	Credits	Marks
1	AGR 611	Financial accounting	Theory	2	100
2	AGR 612	Project Management & Entrepreneurship Development	Theory	2	100
3	AGR 613	Web literacy lab	Practical	4	100
4	AGR 614	Preparation of project report for green house development	Practical	4	100
Total				12	400
Skill Development Component					
5	AGR 621	Supply Chain Management	Theory	2	100
6	AGR 622	Agriculture marketing	Theory	2	100
7	AGR 623	Farm Machinery and Equipment	Theory	2	100
8	AGR 624	AGR/Q7501 Supply Chain Field Assistant	Practical	4	100
9	AGR 625	Preparation of proposal for export of Agri goods	Practical	4	100
10	AGR 626	Field training	Practical	4	100
Total				18	600
Total Credits = General Education Component + Skill Development Component					12+18=30

Ashishan Jashi.

T.Y.B.Voc. (Agriculture): Semester-VI
AGR 611: Financial Accounting

Total Hours: 30

Credits: 2

Course objectives:

- To gain basic knowledge of financial accounting
- To study financial, cost and management accounting
- To learn accounting for depreciation
- To understand accounting for partnership firm

Course outcomes:

Students will be able to

- Understand the basic knowledge of financial accounting
- Understand the financial, cost and management accounting
- Understand the accounting for depreciation
- Understand the accounting for partnership firm

Detailing of syllabus -

Unit 1: Introduction to Financial Accounting:

Hours: 06

Scope and Importance of Financial Accounting; Basic accounting; Accounting Concept and conventions, assumption and limitations; Accounting principles, double entry system, journal, ledger, purchase book, sales book, cash book, petty cash book, trial balance, income and expenditure account, posting of entries in accounts books

Unit 2: Financial, Cost and Management Accounting:

Hours: 06

Preparations of Financial statements, Preparation of trial balance sheet, rectifications of errors, bank reconciliation statements

Unit 3: Accounting for depreciation:

Hours: 06

Understanding of depreciation, Types of depreciation method, selection of depreciation method; choice of method; Different Types of Reserves

Unit 4 Accounting for Partnership Firm

Hours: 06

Introduction, Admission of a New Partner, Death and Retirement of Partners, Dissolution of Partnership Firm

Unit 5: Analysis of Financial Statements

Hours: 06

Nature and Limitations, Techniques of Analysis and Interpretation of Financial Statements, Ratio Analysis.

Shushan Joshi

Reference Books:

- **Kimmel and Weygandt and Kieso**, Financial Accounting, Published by John Wiley, ISBN 9788126551262
- **Tulsian P C**, Financial Accounting, Published by **PEARSON INDIA**, ISBN 9788177582284
- **Mohamed Hanif and Amitabha Mukherjee**, FINANCIAL ACCOUNTING VOL.III by, McGraw Hill ISBN 9789352604128
- **Charles T Horngren et all**. Introduction To Financial Accounting 11th Edition by, PEARSON INDIA, ISBN 9789352862474

Teaching methods:

- Classroom teaching, Lecture method, ICT enabled teaching



Shashan Jasli

T.Y.B.Voc. (Agriculture): Semester-VI
**AGR 612: Project management and Entrepreneurship
development**

Total Hours: 30

Credits: 02

Course Objectives

- To know project management and entrepreneurship development
- To know the importance and advantages of project management
- To know different types of business plans and ventures
- To know about the enterprise growth, expansion and diversification

Course outcomes

Students will be able to

- Understand the project management and entrepreneurship development
- Understand the importance and advantages of project management
- Understand the different types of business plans and ventures
- Understand the about the enterprise growth, expansion and diversification

Detailing of the syllabus -

Unit 1 Introduction to Entrepreneurship

Hours: 06

Meaning and Importance, Factors influencing, entrepreneurship, Characteristics of an entrepreneur viz., Creativity, Innovations, Methods to Initiate Ventures, Legal Challenges, difference between wage employment, self-employment and entrepreneurship

Unit 2 Entrepreneurial competencies

Hours: 06

Defining Competencies – Combination of knowledge, skill
Understanding all competencies; Relevance of entrepreneurial Competencies at different stages of enterprise launching and management

Unit 3 Business Plan for New Ventures

Hours: 06

Meaning and Objectives of a Business Plan, Advantages and cost of preparing a Business Plan, Elements, Critical Assessment

Unit 4: Systematic Planning & Efficiency

Hours: 06

What is quality; attributes of quality; factors affecting quality; quality Management; project its components and systematic planning;

Unit 5 Enterprise growth, expansion & diversification

Hours: 06

Critical factors contributing to the sustenance of an enterprise; Need for growth in the enterprise; various avenues for growth of an enterprise; product addition, product deletion and product substitution; forward & backward linkages

Shreshtha Jethi

Reference Books:

- **Tendon, C:** Environment and Entrepreneur; Clough Publications, Allahabad.
- **Siner A David:** Entrepreneurial Megabucks; John Wiley and Sons, New York.
- **Srivastava S. B:** A Practical Guide to Industrial Entrepreneurs; Sultan Chand and Sons, New Delhi.
- **Prasanna Chandra:** Project Preparation, Appraisal, Implementation; Tata McGraw Hill. New Delhi.
- **Pandey I.M:** Venture Capital - The Indian Experience; Prentice Hall of India. New Delhi
- **Holt:** Entrepreneurship-New Venture Creation; Prentice Hall of India. New Delhi

Teaching methods:

- Classroom teaching, Lecture method, ICT enabled teaching



Abhishek Jeshi

T.Y.B.Voc. (Agriculture): Semester-VI

AGR 613: Web Literacy Lab

Total Hours: 60

Credits: 04

Course Objectives

- To know web literacy
- To know the importance of internet and browsers
- To know different types of websites
- To know about the blog, Digi locker, Desktop remote applications, maps

Course outcomes

Students will be able to

- Understand the web literacy
- Understand the importance of internet and browsers
- Understand the different types of websites
- Understand the about the blog, Digi locker, Desktop remote applications, maps

Detailing of the syllabus -

Practical

Sr. No.	Name of Practical	No. of Hours
01	Understanding of devices used in internet	04
02	Getting Connected to Web	04
03	Understanding Web Browsers	04
04	Getting domain name	04
05	Searching the information on web	08
06	Searching images of various types	08
07	Surf leading websites in field of Government, Education, news and Science	12
08	Understanding username & password and create secure passwords	08
09	Creating Email address	04
10	Email operations	12
11	Create a blog	08
12	Use of Digi Locker	12
13	Use of tools to type in regional language and use of Google Translator	08
14	Use of remote desktop application (Any Desk, Ammyy Admin or TeamViewer)	08
15	Finding the path on Google map	08
16	Searching and applying jobs on web	08

Bhaskar Joshi

References Books:

- **Saxena S.** Ms Office 2007 in a Nutshell, 2011, Vikas Publishing House, **ISBN-10: 8125950362**
- **Shrivastava S. S.** (2008). MS-Office. Firewall Media
- **Joyce J. & Moon M.** Microsoft Office Word 2007 Plain & Simple. Microsoft Press
- **Kumar Bittu,** Microsoft Office 2010, V&S Publishers, 2015
- **Greenlaw R and Hepp E,** Fundamentals of Internet and www by, Tata McGraw-Hill, 2007
- **Patel & Lal B. Barik,** Internet & Web Technology by B, Acme Learning Publishers



Shashan Jashi

T.Y.B.Voc. (Agriculture): Semester-VI

AGR 614: Preparation of project report for green house development

Total Hours: 60

Credits: 04

Course Objectives

- To know green house development
- To know the importance of project report
- To know different types of greenhouses
- To know about the preparation of project reports

Course outcomes

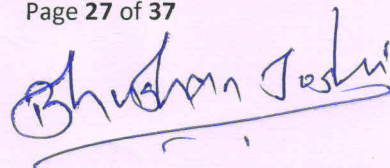
Students will be able to

- Understand the green house development
- Understand the importance of project report
- Understand the different types of greenhouses
- Understand the about the preparation of project reports

Detailing of the syllabus -

Preparation of project report for green house development after field survey on following criteria:

- 1 About the Applicant /Promoter and his/her entrepreneurship
- 2 Details of benefits availed by the Applicant / Promoter
- 3 About Project -Name, Rationale, Management and Description
4. Project details
 - 4a. Agro-climatic suitability / feasibility
 - 4b. Market viability
 - 4c. Financial viability
 - 4d. Land development to harvest of crop
 - 4e. Post-harvest management
 - 4f. Marketing
 - 4g. Value addition
5. Annexures



Reference Books:

Prasanna Chandra: Project Preparation, Appraisal, Implementation; Tata McGraw Hill. New Delhi.

Pandey I.M: Venture Capital - The Indian Experience; Prentice Hall of India. New Delhi
Holt: Entrepreneurship-New Venture Creation; Prentice Hall of India. New Delhi



Bhushan Joshi

T.Y.B.Voc. (Agriculture): Semester-VI
AGR 621: Supply Chain Management

Total Hours: 30

Credits: 02

Course Objectives

- To know supply chain management
- To know the demand and procurement management
- To know logistic management
- To know about the customer relationship management

Course outcomes

Students will be able to

- Understand the supply chain management
- Understand the demand and procurement management
- Understand the logistic management
- Understand the about the customer relationship management

Detailing of the syllabus -

UNIT I: Introduction

Hours: 6

Introduction, objectives and Present Need; Conceptual Model of Supply Chain Management; Elements of SCM; understanding of Traditional selling systems, value chain marketing system and supply chain system

UNIT II: Demand management

Hours: 6

Demand Management in Supply Chain: Types of Demand, Demand Planning and Forecasting; Operations Management in Supply Chain, Basic Principles of Manufacturing Management

UNIT III: Procurement Management

Hours: 6

Procurement Management in Agri. Supply chain: Purchasing Cycle, Types of Purchases, Contract/Corporate Farming, Classification of Purchases Goods or Services

UNIT IV: Logistic Management

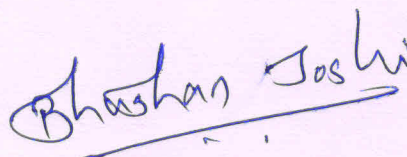
Hours: 6

Logistics Management: History and Evolution of Logistics; Elements of Logistic Management; Distribution Management, Transportation Management; Service Innovation; Packaging for Logistics

Unit V: CRM

Hours: 6

Customer relationship management (CRM): introduction, need, process and types, customer service management, supply chain mapping



Reference Books:

- **Martin Christopher**, Logistics & Supply Chain Management,
- **Shoshanah Cohen**, Strategic Supply Chain Management: The Five Core Disciplines for Top Performance, Second Edition, **ISBN-10: 9780071813082, ISBN-13: 978-0071813082**
- **ASIN: 007181308X**
- **Hugos Michael H.**, Essentials of Supply Chain Management, Publisher: John Wiley & Sons; 3rd edition; **ISBN-10: 0470942185; ISBN-13: 978-0470942185**
- **Khan**, Handbook for Supply Chain Risk Management, **Published by Cengage Learning, ISBN 9788131521878**

Teaching methods:

- Classroom teaching, Lecture method, ICT enabled teaching



Bhushan Jesli

T.Y.B.Voc. (Agriculture): Semester-VI

AGR 622: Agriculture marketing

Total Hours: 30

Credits: 2

Course Objectives

- To know agriculture marketing
- To know the importance of marketing
- To know different channels of marketing
- To know about the warehousing and agri export

Course outcomes

Students will be able to

- Understand the agriculture marketing
- Understand the importance of marketing
- Understand the different channels of marketing
- Understand the about the warehousing and agri export

Detailing of the syllabus -

Unit 1: Agriculture marketing

Hours: 06

Definition, concept and scope, components of a market, importance of agricultural marketing, classification, types of markets, strategic management in Agri business; agriculture production scenario in India

Unit 2: Channel of marketing

Hours: 06

Channel of Marketing: Meaning, definition, channels of different products, market functionaries and their role.

Unit 3: Agriculture product

Hours: 06

Product planning, 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, Problems of agricultural marketing, Nature, scope and role of cooperative marketing in India

Unit 4: Warehousing

Hours: 06

Role of warehousing, State and Central Warehousing Corporations, objectives, functions, advantages, speculation, future trading and hedging.

Unit-5: Agri Export

Hours: 06

Identifying foreign markets for agri export, marketing plan for exports, export documents and procedure, terms of payment and export finance, legal dimensions; Institutional infrastructure for export promotion in India, export assistance, State trading in imports and exports, working of the State trading organisations in India

Rhushan Joshi

Reference books:

- **Acharya, S. S. and N. L. Agarwal**, Agricultural Marketing in India, Oxford and IBH Publishing Company, 1987
- **Kohls Richard L**, Marketing of agricultural products, ISBN-13: 978-0130105844, ISBN-10: 0130105848
- **Norwood F. Bailey and Jayson Lusk**, Agricultural Marketing and Price Analysis, Publisher: Pearson, ISBN-10: 0132211211, ISBN-13: 978-0132211215

Teaching methods:

- Classroom teaching, Lecture method, ICT enabled teaching



Bhushan Jashi

AGR 623: Farm Machinery and Equipment

Total Hours: 30

Credits: 2

Course Objectives

- To know farm machinery and equipments
- To know the importance of farm machinery and equipments
- To know different types of farming equipments
- To know about the harvesting equipments

Course outcomes

Students will be able to

- Understand the farm machinery and equipments
- Understand the importance of farm machinery and equipments
- Understand the different types of farming equipments
- Understand the about the harvesting equipments

Detailing of the syllabus -

Unit 1: Introduction

Hours: 8

Objectives of farm mechanization. Classification of farm machines. Materials of construction and heat treatment; Principles of operation and selection of machines used for production of crops; Mechanization Terminology, Field capacities and economics of machinery.

Unit 2: Tillage and earth moving equipment

Hours: 8

Objectives of tillage; Primary and secondary tillage equipment; Forces acting on tillage tools; Hitching systems and controls. Draft measurement of tillage equipment; ploughing Earth moving equipment - their construction & working principles viz Bulldozer, Trencher, Elevators etc.

Unit 3: Planting and plant protection related equipment

Hours: 8

Sowing, planting & transplanting equipment - their calibration and adjustments. Fertilizer application equipment. Weed control and Plant protection equipment - sprayers and dusters, their calibration, selection, constructional features of different components and adjustments.

Unit 4: Harvesting and post harvesting equipment

Hours: 6

Introduction to Mower, reaper, threshing machine, combined harvester

Prashant Joshi

Reference books:

- **Bell Brian**, Farm Machinery published by Old Pond Publishing Ltd; 6th Revised edition (12 January 2016), **ISBN-10:** 1910456063, **ISBN-13:** 978-1910456064
- **Kepner**, Principles of Farm Machinery, CBS Publishers & Distributors (2005), **ISBN-10:** 8123909772, **ISBN-13:** 978-8123909776
- **John Deere**, The Operation, Care, and Repair of Farm Machinery (Nineteenth Edition), published by John Deere; 19th edition (January 1, 1945), **ASIN:** B003XLIC1M
- **Basavaraj, D.Srigiri & Jayan P.R.**, A Textbook Of Farm Machinery And Power Engineering, **ISBN 9789387973640**

Teaching methods:

- Classroom teaching, Lecture method, ICT enabled teaching



Bhushan Joshi

T.Y.B.Voc. (Agriculture): Semester-VI

AGR 624: Supply Chain Field Assistant AGR/Q7501

Total Hours: 60

Credits: 4

Course Objectives

- To know supply chain management
- To know the demand and procurement management
- To know logistic management
- To know about the customer relationship management

Course outcomes

Students will be able to

- Understand the supply chain management
- Understand the demand and procurement management
- Understand the logistic management
- Understand the about the customer relationship management

Detailing of the syllabus -

Practical

1. AGR/N7501 – Coordinate with buyer and farmer
2. AGR/N7502 – Procure the stock
3. AGR/N7503 - Pack and store the stock
4. AGR/N7504 – Arrange for transportation of produce
5. AGR/N9905 – Coordinate with colleagues
6. AGR/N9906 – Maintain safe work environment

Reference Books:

- **Martin Christopher**, Logistics & Supply Chain Management,
- **Shoshanah Cohen**, Strategic Supply Chain Management: The Five Core Disciplines for Top Performance, Second Edition, ISBN-10: 9780071813082, ISBN-13: 978-0071813082
- ASIN: 007181308X
- **Hugos Michael H.**, Essentials of Supply Chain Management, Publisher: John Wiley & Sons; 3rd edition; ISBN-10: 0470942185; ISBN-13: 978-0470942185
- **Khan**, Handbook For Supply Chain Risk Management, Published by Cengage Learning, ISBN 9788131521878

Bhushan Joshi

T.Y.B.Voc. (Agriculture): Semester-VI

AGR 625: Preparation of proposal for export of Agri goods

Total Hours: 60

Credits: 4

Course Objectives

- To know agriculture marketing
- To know the importance of proposal making
- To know different channels of marketing
- To know about the warehousing and agri export

Course outcomes

Students will be able to

- Understand the agriculture marketing
- Understand the importance of proposal making
- Understand the different channels of marketing
- Understand the about the warehousing and agri export

Detailing of the syllabus -

Practical

- Understanding of APEDA agriXchnage
- Understanding, listing of all required documents for export of Agri goods
- Flow chart of process of export
- Proposal for export of banana

Reference books:

- Acharya, S. S. and N. L. Agarwal, Agricultural Marketing in India, Oxford and IBH Publishing Company, 1987
- Kohls Richard L, Marketing of agricultural products, ISBN-13: 978-0130105844, ISBN-10: 0130105848
- Norwood F. Bailey and Jayson Lusk, Agricultural Marketing and Price Analysis, Publisher: Pearson, ISBN-10: 0132211211, ISBN-13: 978-0132211215

Ashokan Joshi

T.Y.B.Voc. (Agriculture): Semester-VI

AGR 626: Field Training

Total Hours: 60

Credits: 4

Course Objectives

- To know field conditions
- To know the importance of firm
- To know different types of firms
- To know about the management of a firm

Course outcomes

Students will be able to

- Understand the field conditions
- Understand the importance of firm
- Understand the different types of firms
- Understand the about the management of a firm

Detailing of the syllabus -

Report of field training on following criteria:

- Introduction of firm
- Products of firm
- Production unit and its function in the firm
- Management of the firm
- Your observations

Bhushan Jeshi