LEARNING OUTCOME BASED VOCATIONAL CURRICULUM

JOB ROLE: Floriculturist (Open Cultivation)

(QUALIFICATION PACK: Ref. Id. AGR/Q0701)

SECTOR: Agriculture

Classes 11 and 12

PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION

(a constituent unit of NCERT, under MHRD, Government of India)

Shyamla Hills, Bhopal- 462 013, M.P., India

http://www.psscive.ac.in

Gandhiji's Talisman

I will give you a talisman. Whenever you are in doubt or when the self becomes too much with you, apply the following test:

Recall the face of the poorest and the weakest man whom you may have seen and ask yourself if the step you contemplate is going to be of any use to him. Will he gain anything by it? Will it restore him to a control over his own life and destiny? In other words, will it lead to Swaraj for the hungry and spiritually starving millions?

Then you will find your doubts and your self melting away.

LEARNING OUTCOME BASED VOCATIONAL CURRICULUM

JOB ROLE: Floriculturist (Open Cultivation)

(QUALIFICATION PACK: Ref. Id.AGR/Q0701)

SECTOR: Agriculture

Classes 11 and 12

PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION

Shyamla Hills, Bhopal- 462 013, M.P., India

LEARNING OUTCOME BASED VOCATIONAL CURRICULUM
Agriculture- Floriculturist (Open Cultivation)

June, 2017

http://www.psscive.ac.in

Published by:
Joint Director
PSS Central Institute of Vocational
Education, NCERT, Shyamla Hills, Bhopal

PATRONS

Prof. Hrushikesh Senapaty, Ph.D.,
Director, National Council of Educational Research and Training (NCERT), New Delhi

Prof. Rajesh Khambayat, Ph.D.,
Joint Director
PSS Central Institute of Vocational Education, Bhopal

COURSE COORDINATOR

Prof. Rajiv Kumar Pathak,
Head
Dept. of Agriculture & Animal Husbandry,
PSS Central Institute of Vocational Education, Bhopal

FOREWORD

The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE) a constituent of the National Council of Educational Research and Training (NCERT) is spearheading the efforts of developing learning outcome based curricula and courseware aimed at integrating both vocational and general qualifications to open pathways of career progression for students. It is a part of Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education (CSSVSHSE) launched by the Ministry of Human Resource Development, Government of India in 2012. The PSS Central Institute of Vocational Education (PSSCIVE) is developing curricula under the project approved by the Project Approval Board (PAB) of *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA). The main purpose of the competency based curricula is to bring about the improvement in teaching-learning process and working competences through learning outcomes embedded in the vocational subject.

It is a matter of great pleasure to introduce this learning outcome based curriculum as part of the vocational training packages for the job role of Floriculturist (Open Cultivation). The curriculum has been developed for the higher secondary students of vocational education and is aligned to the National Occupation Standards (NOSs) of a job role identified and approved under the National Skill Qualification Framework (NSQF).

The curriculum aims to provide children with employability and vocational skills to support occupational mobility and lifelong learning. It will help them to acquire specific occupational skills that meet employers' immediate needs. The teaching process is to be performed through the interactive sessions in classrooms, practical activities in laboratories and workshops, projects, field visits, and professional experiences.

The curriculum has been developed and reviewed by a group of experts and their contributions are greatly acknowledged. The utility of the curriculum will be adjudged by the qualitative improvement that it brings about in teaching-learning. The feedback and suggestions on the content by the teachers and other stakeholders will be of immense value to us in bringing about further improvement in this document.

Hrushikesh Senapaty
Director
National Council of Education Research and Training

PREFACE

India today stands poised at a very exciting juncture in its saga. The potential for achieving inclusive growth are immense and the possibilities are equally exciting. The world is looking at us to deliver sustainable growth and progress. To meet the growing expectations, India will largely depend upon its young workforce. The much-discussed demographic dividend will bring sustaining benefits only if this young workforce is skilled and its potential is channelized in the right direction.

In order to fulfil the growing aspirations of our youth and the demand of skilled human resource, the Ministry of Human Resource Development (MHRD), Government of India introduced the revised Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education that aims to provide for the diversification of educational opportunities so as to enhance individual employability, reduce the mismatch between demand and supply of skilled manpower and provide an alternative for those pursuing higher education. For spearheading the scheme, the PSS Central Institute of Vocational Education (PSSCIVE) was entrusted the responsibility to develop learning outcome based curricula, student workbooks, teacher handbooks and e-learning materials for the job roles in various sectors, with growth potential for employment.

The PSSCIVE firmly believes that the vocationalisation of education in the nation need to be established on a strong footing of philosophical, cultural and sociological traditions and it should aptly address the needs and aspirations of the students besides meeting the skill demands of the industry. The curriculum, therefore, aims at developing the desired professional, managerial and communication skills to fulfil the needs of the society and the world of work. In order to honour its commitment to the nation, the PSSSCIVE has initiated the work on developing learning outcome based curricula with the involvement of faculty members and leading experts in respective fields. It is being done through the concerted efforts of leading academicians, professionals, policy makers, partner institutions, Vocational Education and Training experts, industry representatives, and teachers. The expert group through a series of consultations, working group meetings and use of reference materials develops a National Curriculum. Currently, the Institute is working on developing curricula and courseware for over 100 job roles in various sectors.

We extend our gratitude to all the contributors for selflessly sharing their precious knowledge, acclaimed expertise, and valuable time and positively responding to our request for development of curriculum. We are grateful to MHRD and NCERT for the financial support and cooperation in realising the objective of providing learning outcome based modular curricula and courseware to the States and other stakeholders under the PAB (Project Approval Board) approved project of *Rashtriya Madhyamik Shiskha Abhiyan* (RMSA) of MHRD.

Finally, for transforming the proposed curriculum design into a vibrant reality of implementation, all the institutions involved in the delivery system shall have to come together with a firm commitment and they should secure optimal community support. The success of this curriculum depends upon its effective implementation and it is expected that the managers of vocational education and training system, including subject teachers will make efforts to create better facilities, develop linkages with the world of work and foster a conducive environment as per the content of the curriculum document.

The PSSCIVE, Bhopal remains committed in bringing about reforms in the vocational education and training system through the learner-centric curricula and courseware. We hope that this document will prove useful in turning out more competent Indian workforce for the 21st Century.

RAJESH P. KHAMBAYAT
Joint Director
PSS Central Institute of Vocational Education

ACKNOWLEDGEMENTS

On behalf of the team at the PSS Central Institute of Vocational Education (PSSCIVE) we are grateful to the members of the Project Approval Board (PAB) *of Rashtriya Madhyamik Shiksha Abhiyan* (RMSA) and the officials of the Ministry of Human Resource Development (MHRD), Government of India for the financial support to the project for development of curricula.

We are grateful to the Director, NCERT for his support and guidance. We also acknowledge the contributions of our colleagues at the Technical Support Group of RMSA, MHRD, RMSA Cell at the National Council of Educational Research and Training (NCERT), National Skill Development Agency (NSDA), National Skill Development Corporation (NSDC) and Agriculture Skill Council of India (ASCI) for their academic support and cooperation.

We are grateful to the contributors for their earnest efforts and contributions in the development of this learning outcome based curriculum. Their names are acknowledged in the list of contributors. The contributions of the course coordinator Rajiv Kumar Pathak, Professor and Head, Department of Agriculture and Animal Husbandry and the reviewer
D. L. N. Rao, Emeritus Scientist, Indian Institute of Soil Science, Nabi Bagh, Berasia Road, Bhopal are thankfully acknowledged.

. The contributions made by Vinay Swarup Mehrotra, Professor and Head, Curriculum Development and Evaluation Centre (CDEC),Vipin Kumar Jain, Associate Professor and Head, Programme Planning and Monitoring Cell (PPMC) and Dipak Shudhalwar, Associate Professor, Department of Engineering & Technology, PSSCIVE in development of the curriculum for the employability skills are duly acknowledged.

The assistance provided by Durgesh Kumar Satankar, Computer Operator Grade II in typing and composing of the material is duly acknowledged.

PSSCIVE Team

CONTENTS

1. COURSE OVERVIEW

COURSE TITLE: Agriculture – Floriculturist (Open Cultivation)

A Floriculturist (Open Cultivation) performs the basic operations related to preparation of field, seed bed, planting, transplanting, selection of flower crops, and caring of flower crops. As the flower crop grow and develop. Floriculturist performs maintenance operations such as thinning, weeding, irrigations, fertigation, controlling pests and diseases etc. They are also involved in operations such as harvesting and post harvest management, packing and transportation.

COURSE OUTCOMES: On completion of the course, student should be able to:

- ☐ Apply effective oral and written communication skills to interact with people and customers;
- ☐ Identify the principal components of a computer system;
- ☐ Demonstrate the basic skills of using computer;
- ☐ Demonstrate self-management skills;
- ☐ Demonstrate the ability to provide a self-analysis in context of entrepreneurial skills and abilities;
- ☐ Demonstrate the knowledge of the importance of green skills in meeting the challenges of sustainable development and environment protection;
- ☐ Communicate effectively with the client
- ☐ Identify the principal components of a computer system
- ☐ Identify ornamental plants
- ☐ Demonstrate the use of tools and equipment
- ☐ Demonstrate knowledge of nursery management
- ☐ Demonstrate field preparations and cultural operation
- ☐ Demonstrate application of manure and fertilizers
- ☐ Demonstrate irrigation method
- ☐ Demonstrate cultivation of commercial flower crop
- ☐ Identify and grow annuals
- ☐ Identify and grow perennials
- ☐ Demonstrate insect – pest, diseases and weed management
- ☐ Demonstrate harvest and post harvest operations
- ☐ Administer first aid to a casualty with small cuts, grazes, bruises, external bleeding, minor burns and scalds

COURSE REQUIREMENTS: The learner should have the basic knowledge of science.

COURSE LEVEL: On completion of this courses a student can take up B. Voc. degrees programme in University/ colleges for course in Horticulture area such as B. Voc. (Floriculture and landscape gardening), and B. Voc. (Green house technology).

COURSE DURATION: **600 hrs**

Class 11	:	300 hrs
Class 12	:	300 hrs
Total	**:**	**600 hrs**

2. SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11 and 12 opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class 11 is as follows:

The unit-wise distribution of hours and marks for Class 11 is as follows:

CLASS 11			
	Units	**No. of Hours for Theory and Practical 160**	**Max. Marks for Theory and Practical 100**
Part A	**Employability Skills**		
	Unit 1: Communication Skills	25	**10**
	Unit 2: Self-management Skills	25	
	Unit 3: Information and Communication Technology Skills	20	
	Unit 4: Entrepreneurial Skills	25	
	Unit 5: Green Skills	15	
	Total	**110**	**10**
Part B	**Vocational Skills**		
	Unit 1: Introduction to Floriculture	20	40
	Unit 2: Nursery Management	35	
	Unit3: Tools and Equipment	20	
	Unit 4: Field preparation and Cultural Operation	30	
	Unit 5: Nutrition and Irrigation	30	
	Unit 6: Insect Disease and Weed Management	30	
	Total	**165**	**40**
Part C	**Practical Work**		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
	Total	**10**	**35**
Part D	**Project Work/Field Visit**		
	Practical File/Student Portfolio	10	10
	Viva Voce	05	05
	Total	**15**	**15**
	Grand Total	**300**	**100**

The unit-wise distribution of hours and marks for Class 12 is as follows:

CLASS 12			
	Units	**No. of Hours for Theory and Practical 200**	**Max. Marks for Theory and Practical 100**
Part A	**Employability Skills**		
	Unit 1: Communication Skills	25	10
	Unit 2: Self-management Skills	25	
	Unit 3: Information and Communication Technology Skills	20	
	Unit 4: Entrepreneurial Skills	25	
	Unit 5: Green Skills	15	
	Total	**110**	**10**
Part B	**Vocational Skills**		
	Unit 1: Cultivation of Commercial Crop-I	35	40
	Unit 2: Cultivation of Commercial Crop-II	35	
	Unit 3: Growing off Annuals	35	
	Unit 4: Growing of Perennials	30	
	Unit 5: Post Harvest Management and Value Addition	30	
	Total	**165**	**40**
Part C	**Practical Work**		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
	Total	**10**	**35**
Part D	**Project Work/Field Visit**		
	Practical File/Student Portfolio	10	10
	Viva Voce	05	05
	Total	**15**	**15**
	Grand Total	**300**	**100**

3. TEACHING/TRAINING ACTIVITIES

The teaching and training activities have to be conducted in classroom, laboratory/ workshops and field visits. Students should be taken to field visits for interaction with experts and to expose them to the various tools, equipment, materials, procedures and operations in the workplace. Special emphasis should be laid on the occupational safety, health and hygiene during the training and field visits.

CLASSROOM ACTIVITIES

Classroom activities are an integral part of this course and interactive lecture sessions, followed by discussions should be conducted by trained vocational teachers. Vocational

teachers should make effective use of a variety of instructional aids, such as audio-video materials, colour slides, charts, diagrams, models, exhibits, hand-outs, online teaching materials, etc. to transmit knowledge and impart training to the students.

PRACTICAL WORK IN LABORATORY/WORKSHOP

Practical work may include but not limited to hands-on-training, simulated training, role play, case based studies, exercises, etc. Equipment and supplies should be provided to enhance hands-on learning experience of students. Only trained personnel should teach specialized techniques. A training plan that reflects tools, equipment, materials, skills and activities to be performed by the students should be submitted by the vocational teacher to the Head of the Institution.

FIELD VISITS/ EDUCATIONAL TOUR

In field visits, children will go outside the classroom to obtain specific information from experts or to make observations of the activities. A checklist of observations to be made by the students during the field visits should be developed by the Vocational Teachers for systematic collection of information by the students on the various aspects. Principals and Teachers should identify the different opportunities for field visits within a short distance from the school and make necessary arrangements for the visits. At least three field visits should be conducted in a year.

4. ASSISMENT AND CERTIFICATION

Upon successful completion of the course by the candidate, the Central/ State Examination Board for Secondary Education and the respective Sector Skill Council will certify the competencies.

The National Skills Qualifications Framework (NSQF) is based on outcomes referenced to the National Occupation Standards (NOSs), rather than inputs. The NSQF level descriptors, which are the learning outcomes for each level, include the process, professional knowledge, professional skills, core skills and responsibility. The assessment is to be undertaken to verify that individuals have the knowledge and skills needed to perform a particular job and that the learning programme undertaken has delivered education at a given standard. It should be closely linked to certification so that the individual and the employer could come to know the competencies acquired through the vocational subject or course. The assessment should be reliable, valid, flexible, convenient, cost effective and above all it should be fair and transparent. Standardized assessment tools should be used for assessment of knowledge of students. Necessary arrangements should be made for using technology in assessment of students.

KNOWLEDGE ASSESSMENT (THEORY)

Knowledge Assessment should include two components: one comprising of internal assessment and second an external examination, including theory examination to be conducted by the Board. The assessment tools shall contain components for testing the knowledge and application of knowledge. The knowledge test can be objective paper based test or short structured questions based on the content of the curriculum.

WRITTEN TEST

It allows candidates to demonstrate that they have the knowledge and understanding of a given topic. Theory question paper for the vocational subject should be prepared by the subject experts comprising group of experts of academicians, experts from existing vocational subject experts/teachers, subject experts from university/colleges or industry. The respective Sector Skill Council should be consulted by the Central/State Board for preparing the panel of experts for question paper setting and conducting the examinations.

The blue print for the question paper may be as follows:

Duration: 3 hrs **Max. Mark: 40**

		No. of Questions			
	Typology of Question	**Very Short Answer (1 mark)**	**Short Answer (2 Marks)**	**Long Answer (3 Marks)**	**Marks**
1.	Remembering – (Knowledge based simple recall questions, to know specific facts, terms, concepts, principles, or theories; identify, define or recite, information)	**3**	**2**	**2**	**13**
2.	Understanding – (Comprehension – to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	**2**	**3**	**2**	**14**
3.	Application – (Use abstract information in concrete situation, to apply knowledge to new situations: Use given content to interpret a situation, private an example, or solve a problem)	**0**	**2**	**1**	**07**
4.	High Order Thinking Skills – (Analysis & Synthesis – Classify, compare, contrast, or differentiate between different pieces of information; Organize and/ or integrate unique pieces of information from a variety of sources)	**0**	**2**	**0**	**04**
5.	Evaluation – (Appraise, judge, and/or justify the value or worth of a decision or outcome, or to predict outcomes based on values)	**0**	**1**	**0**	**02**
	Total	**5x1=5**	**10x2=20**	**5x3=15**	**40 (20 questions)**

SKILL ASSESSMENT (PRACTICAL)

Assessment of skills by the students should be done by the assessors/examiners on the basis of practical demonstration of skills by the candidate, using a competency checklist. The competency checklist should be developed as per the National Occupation Standards (NOSs) given in the Qualification Pack for the Job Role to bring about necessary consistency in the quality of assessment across different sectors and Institutions. The student has to demonstrate competency against the performance criteria defined in the National Occupation Standards and the assessment will indicate that they are 'competent', or are 'not yet competent'. The assessors assessing the skills of the students should possess a current experience in the industry and should have undergone an effective training in assessment principles and practices. The Sector Skill Councils should ensure that the assessors are provided with the training on the assessment of competencies.

Practical examination allows candidates to demonstrate that they have the knowledge and understanding of performing a task. This will include hands-on practical exam and viva voce. For practical, there should be a team of two evaluators – the subject teacher and the expert from the relevant industry certified by the Board or concerned Sector Skill Council. The same team of examiners will conduct the viva voce.

Project Work (individual or group project) is a great way to assess the practical skills on a certain time period or timeline. Project work should be given on the basis of the capability of the individual to perform the tasks or activities involved in the project. Projects should be discussed in the class and the teacher should periodically monitor the progress of the project and provide feedback for improvement and innovation. Field visits should be organised as part of the project work. Field visits can be followed by a small-group work/project work. When the class returns from the field visit, each group might be asked to use the information that they have gathered to prepare presentations or reports of their observations. Project work should be assessed on the basis of practical file or student portfolio.

Student Portfolio is a compilation of documents that supports the candidate's claim of competence. Documents may include reports, articles, photos of products prepared by students in relation to the unit of competency.

Viva voce allows candidates to demonstrate communication skills and content knowledge. Audio or video recording can be done at the time of viva voce. The number of external examiners would be decided as per the existing norms of the Board and these norms should be suitably adopted/adapted as per the specific requirements of the vocational subject. Viva voce should also be conducted to obtain feedback on the student's experiences and learning during the project work/field visits.

5. UNIT CONTENTS

CLASS 11

Part A: Employability Skills

S.No.	Units	Duration (Hrs)
1.	Communication Skills - III	25
2.	Self-management Skills – III	25
3.	Information and Communication Technology Skills – III	20
4.	Entrepreneurial Skills – III	25
5.	Green Skills – III	15
	Total	**110**

Unit 1: Communication Skill – III			
Learning Outcome	**Theory**	**Practical**	**Duration**

	(10 hrs)	(15 hrs)	(25 Hrs)
1. Demonstrate knowledge of various methods of communication	1. Methods of communication - Verbal - Non-verbal - Visual	1. Writing pros and cons of written, verbal and non-verbal communication 2. Listing do's and don'ts for avoiding common body language mistakes	**05**
2. Identify specific communication styles	1. Communication styles- assertive, aggressive, passive-aggressive, submissive, etc.	1. Observing and sharing communication styles of friends, teachers and family members and adapting the best practices 2. Role plays on communication styles.	**10**
3. Demonstrate basic writing skills	1. Writing skills to the following: (I) Sentence (II) Phrase (III) Kinds of Sentences (IV) Parts of Sentence (V) Parts of Speech (VI) Articles (VII) Construction of a Paragraph	1. Demonstration and practice of writing sentences and paragraphs on topics related to the subject	**10**
Total			**25**

Unit 2: Self-management Skills – III			
Learning Outcome	**Theory (10 hrs)**	**Practical (15 hrs)**	**Duration (25 Hrs)**
1. Demonstrate impressive appearance and grooming	1. Describe the importance of dressing appropriately, looking decent and positive body language 2. Describe the term grooming 3. Prepare a personal grooming checklist 4. Describe the techniques of self-exploration	1. Demonstration of impressive appearance and groomed personality 2. Demonstration of the ability to self- explore	**10**
2. Demonstrate team work skills	1. Describe the important factors that influence in team building 2. Describe factors influencing team work	1. Group discussion on qualities of a good team 2. Group discussion on strategies that are adopted for team building and team work	**10**
3. Apply time management strategies and	1, Meaning and importance of time management –	1.Game on time management 2. Checklist preparation	

techniques	setting and prioritizing goals, creating a schedule, making lists of tasks, balancing work and leisure, using different optimization tools to break large tasks into smaller tasks.	3. To-do-list preparation	**05**
Total			**25**

Unit 3: Information and Communication Technology Skills - III			
Learning Outcome	**Theory (08 hrs)**	**Practical (12 hrs)**	**Duration (20 Hrs)**
1. Create a document on word processor	1. Introduction to word processing. 2. Software packages for word processing. 3. Opening and exiting the word processor. 4. Creating a document	1. Demonstration and practice of the following: (I) Listing the features of word processing (II) Listing the software packages for word processing (III) Opening and exit the word processor (IV) Creating a document	**10**
2. Edit, save and print a document in word processor	1. Editing text 2. Wrapping and aligning the text 3. Font size, type and face. 4. Header and Footer 5. Auto correct 6. Numbering and bullet 7. Creating table 8. Find and replace 9. Page numbering. 10. Printing document. 11. Saving a document in various formats.	1. Demonstration and practising the following: (I) Editing the text (II) Word wrapping and alignment (III) Changing font type, size and face (IV) Inserting header and footer (V) Removing header and footer 1. Using autocorrect option 2. Insert page numbers and bullet 3. Save and print a document	**10**
Total			**20**

Unit 4: Entrepreneurial Skills - III			
Learning Outcome	**Theory (10 hrs)**	**Practical (15 hrs)**	**Duration (25 Hrs)**
1. Describe the significance of entrepreneurial values and attitude	1. Values in general and entrepreneurial values 2. Entrepreneurial value orientation with respect to innovativeness, independence,	1. Listing of entrepreneurial values by the students. 2. Group work on identification of entrepreneurial values and their roles after listing or reading 2-3	**10**

	outstanding performance and respect for work	stories of successful entrepreneur 3. Exhibiting entrepreneurial values in Ice breaking, rapport building, group work and home assignments	
2. Demonstrate the knowledge of attitudinal changes required to become an entrepreneur	1. Attitudes in general and entrepreneurial attitudes 2. Using imagination/ intuition 3. Tendency to take moderate risk 4. Enjoying freedom of expression and action 5. Looking for economic opportunities 6. Believing that we can change the environment 7. Analyzing situation and planning action 8. Involving in activity	1. Preparing a list of factors that influence attitude in general and entrepreneurial attitude 2. Demonstrating and identifying own entrepreneurial attitudes during the following micro lab activities like thematic appreciation test 3. Preparing a short write-up on "who am I" 4. Take up a product and suggest how its features can be improved 5. Group activity for suggesting brand names, names of enterprises, etc.	**15**
Total			**25**

Unit 5: Green Skills - III			
Learning Outcome	**Theory (07 hrs)**	**Practical (08 hrs)**	**Duration (15 Hrs)**
1. Describe importance of main sector of green economy	1. Main sectors of green economy- E-waste management, green transportation, renewal energy, green construction, water management 2. Policy initiatives for greening economy in India	1. Preparing a poster on any one of the sectors of green economy 2. Writing a two-page essay on important initiatives taken in India for promoting green economy	**08**
2. Describe the major green Sectors/Areas and the role of various stakeholder in green economy	1. Stakeholders in green economy 2. Role of government and private agencies in greening cities, buildings, tourism, industry, transport, renewable energy, waste management, agriculture, water, forests and fisheries	1. Preparing posters on green Sectors/Areas: cities, buildings, tourism, industry, transport, renewable energy, waste management, agriculture, water, forests and fisheries	**07**

Total			**15**

CLASS 11

Part B: Vocational Skills

S.No.	Units	Duration (Hrs)
1.	Introduction to Floriculture	20
2.	Nursery Management	35
3.	Tools and Equipment	20
4.	Field preparation and Cultural Operation	30
5.	Nutrition and Irrigation	30
6.	Insect-Pests, Diseases and Weed Management	30
	Total	**165**

Unit 1: Introduction to Floriculture

Learning Outcome	Theory (10 hrs)	Practical (10 hrs)	Duration (20 Hrs)
1. Describe floriculture and its importance	1. Definition of floriculture and its importance 2. Aesthetic value and importance of flowers	1. Identification of needs for flower cultivation	**05**
2. Explain present status and prospects of floriculture in India	1. Present status of floriculture in India 2. Scope of floriculture in India	1. Identification of the economically important flower crops in India	**05**
3. Identify ornamental plants	1. Define loose flower 2. Define cut flowers 3. Annuals and perennials ornamental plants 4. Classification of flowers as per climate, life cycle, market values etc.	1. Enlist examples of loose flowers. 2. Identification of cut flower 3. Identification of annuals 4. Identification of perennials	**10**
Total			**20**

Unit 2: Nursery Management

Learning Outcome	Theory (15hrs)	Practical (20 hrs)	Duration (35 Hrs)
1. Define nursery and its importance	1. Definition of nursery 2. Describe the importance of nursery 3. Types of nursery	1. Enlist of various types of nursery	**05**
2. Identify tools, equipment and other materials	1. Tools and equipment required in nursery 2. Plat growth regulator (PGR) and their utility	1. Identification of various tools used in nursery 2. Enlist/ identify of	**05**

	3. Preparation of potting materials	various equipments used in nursery	
3. Prepare nursery bed	1. Importance of nursery beds. 2. Selection of site for nursery. 3. Preparation of nursery bed 4. Precaution taken during preparation of nursery beds	1. Identification of raised bed, flat bed and ridges 2. Demonstration of nursery preparations	**05**
4. Apply manures, fertilizers and pesticides	1. Methods of manures & fertilizers to be applied in nursery/ plants 2. Procedure of Soil and seed treatment	1. Identification of manures 2. Identification of fertilizers. 3. Calculation of the quantity of given manures and fertilizers 4. Demonstration of soil and seed treatment.	**06**
5. Sow seed and plant the material	1. Method of seed sowing 2. Define potting depotting & repotting 3. Precaution taken during seeds sowing and planting	1. Enlist methods of seed sowing 2. Demonstration of seed sowing 3. Demonstration of potting depotting, and repotting 4. Demonstration of transplanting	**06**
6. Care & maintenance of nursery plants	1. Handling of nursery plants. 2. Common nursery diseases and their control 3. Common insects found in nursery and their control	1. Enlist common diseases of nursery 2. Enlist common pests of nursery 3. Demonstration of different activities for caring and maintenance of plants in nursery	**08**
Total			**35**

Unit 3: Tools and Equipment

Learning Outcome	**Theory (08 hrs)**	**Practical (12hrs)**	**Duration (20 Hrs)**
1. Identify tools and equipment used in flower cultivation	1. Types of tools and equipments used in flower cultivation 2. Use of tools and equipment	1. Identification of tools and equipment used in flower production	**10**

2. Demonstrate of precautions taken during use of tools and equipment	1. Precautions taken during use of tools and equipments	1. Demonstration of the use of given tools and equipment 2. Enlist precaution taken during use of tools & equipment	**05**
3. Care and maintenance of tools and equipment	1. Care and maintenance of tools and equipment 2. Precaution to be taken after use of tools and equipment	1. Demonstration of the care and maintenance of equipment	**05**
Total			**20**

Unit 4: Field preparation and Cultural Operations			
Learning Outcome	**Theory (12 hrs)**	**Practical (18 hrs)**	**Duration (30 Hrs)**
1. Select site for cultivation of ornamental crops	1. Selection of the site 2. Soil and its properties 3. Optimum agro climatic condition for cultivation of flower crops	1. Demonstration of criteria for selection of site 2. Enlist agro-climatic condition given flower crops	**05**
2. Demonstrate field preparation	1. Tools and equipment's used in field preparation 2. Preparation of field 3. Define harrowing 4. Preparation of ridges and furrows 5. Utility of Farm yard Manure(FYM) application during field preparation	1. Identification of tools and equipment 2. Demonstration of application of manure and fertilizer.	**10**
3. Demonstrate cultural operations	1. Define weeding 2. Define mulching 3. Define staking 4. Define earthing up	1. Demonstration of weeding 2. Demonstration of mulching 3. Demonstration of staking	**08**
4. Special practices in flower cultivation	1. Define disbudding 2. Define de shooting 3. Define pinching 4. Define pruning 5. Define training	1. Demonstration of disbudding and de shooting 2. Demonstration of pruning & training 3. Demonstration of pinching	**07**
Total			**30**

Unit 5: Nutrition and Irrigation

Learning Outcome	Theory (12hrs)	Practical (18hrs)	Duration (30 Hrs)
1. Identify manures and fertilizers	1. Define manures 2. Define fertilizers 3. Classification of manures and fertilizers. 4. Importance of manures and fertilizers 5. Types of manures/ fertilizers/ Bio-fertilizer	1. Identification of manures & fertilizers 2. Enlist the name and percentage of nutrients in fertilizers 3. Enlist nutrients of different type of manures.	**10**
2. Apply manures and fertilizers	1. How and when manures can be applied 2. Describe methods of manure and fertilizer application 3. How Bio-fertilizer are applied	1. Enlist the methods of fertilizer application 2. Demonstration of the application of manures and fertilizers 3. Identification of types of Bio-fertilizers 4. Demonstration of the method of application of bio-fertilizers	**10**
4. Demonstrate irrigation methods and drainage	1. Method of irrigation 2. Advantage/ disadvantage of different methods 3. Drainage and its importance	1. Demonstration of different irrigation methods 2. Identification of the equipments, parts use in irrigation	**10**
Total			**30**

Unit 6: Insect-Pest, Diseases and weed Management			
Learning Outcome	**Theory (12hrs)**	**Practical (18 hrs)**	**Duration (30 Hrs)**
1. Identify insects of commercial flower crops and their control measures	1. Common Insects of flower crop 2. Different methods of insect pest control (mechanical Chemical, physical and biological) 3. Common pesticides and its formulations	1. Identification of insect pest of flower plants 2. Enlist predators 3. Preparation of solution of given insecticide for spray	**08**
2. Identify Common diseases of commercial flower crops and this control measures	1. Common diseases of flower crops 2. Different method of disease control 3. Fungicides and its uses	1. Enlist common diseases 2. Identification of diseases of ornamental plants 3. Enlist common chemicals used in diseases control 4. Demonstration of the application of	**08**

Unit 6: Insect-Pest, Diseases and weed Management			
Learning Outcome	**Theory (12hrs)**	**Practical (18 hrs)**	**Duration (30 Hrs)**
		fungicides	
3. Identify Common weeds of commercial flower crops and control measures	1. Common weeds found in your vicinity 2. Methods of weed control 3. Plant parasitic weeds 4. Weedicides and its uses	1. Enlist weeds found in nearby area 2. Identification of common weeds 3. Identification of plant parasites 4. Identification of weedicides 5. Demonstration weed control measures	**08**
4. Apply insecticides, fungicides and weedicides	1. Equipments used in spraying and dusting 2. Preparation of solutions 3. Precaution taken during application of chemicals	1. Identification of different equipments 2. Demonstration of spraying and dusting	**06**
Total			**30**

CLASS 12

Part A-Employability Skills

S.No.	Units	Duration (Hrs)
1.	Communication Skills - IV	25
2.	Self-management Skills – IV	25
3.	Information and Communication Technology Skills – IV	20
4.	Entrepreneurial Skills – IV	25
5.	Green Skills – IV	15
	Total	**110**

Unit 1: Communication Skills – IV			
Learning Outcome	**Theory (10 hrs)**	**Practical (15 hrs)**	**Total Duration (25 Hrs)**
1. Describe the steps to active listening skills	1. Importance of active listening at workplace 2. Steps to active listening	1. Demonstration of the key aspects of becoming active listener 2. Preparing posters of steps for active listening	**10**

2. Demonstrate basic writing skills	2. Writing skills to the following: (VIII) Sentence (IX) Phrase (X) Kinds of Sentences (XI) Parts of Sentence (XII) Parts of Speech (XIII) Articles (XIV) Construction of a Paragraph	1. Demonstration and practice of writing sentences and paragraphs on topics related to the subject	**15**
Total			**25**

Unit 2: Self-management Skills – IV			
Learning Outcome	**Theory (10 hrs)**	**Practical (15 hrs)**	**Total Duration (25 Hrs)**
1. Describe the various factors influencing self-motivation	1. Finding and listing motives (needs and desires); 2. Finding sources of motivation and inspiration (music, books, activities);expansive thoughts; living fully in the present moment; dreaming big	1.Group discussion on identifying needs and desire 2. Discussion on sources of motivation and inspiration	**10**
2. Describe the basic personality traits, types and disorders	1. Describe the meaning of personality 2. Describe how personality influence others 3. Describe basic personality traits 4. Describe common personality disorders-paranoid, antisocial, schizoid, borderline, narcissistic, avoidant, dependent and obsessive	1. Demonstrate the knowledge of different personality types	**15**
Total			**25**

Unit 3: Information and Communication Technology Skills - IV			
Learning Outcome	**Theory (10 hrs)**	**Practical (15 hrs)**	**Total Duration (25 Hrs)**

1. Perform tabulation using spreadsheet application	1. Introduction to spreadsheet application 2. Spreadsheet applications 3. Creating a new worksheet 4. Opening workbook and entering text 5. Resizing fonts and styles 6. Copying and moving 7. Filter and sorting 8. Formulas and functions 9. Password protection. 10. Printing a spreadsheet. 11. Saving a spreadsheet in various formats.	1. Demonstration and practice on the following: (I) Introduction to the spreadsheet application (II) Listing the spreadsheet applications (III) Creating a new worksheet (IV) Opening the workbook and enter text (V) Resizing fonts and styles (VI) Copying and move the cell data (VII) Sorting and Filter the data (VIII) Applying elementary formulas and functions (IX) Protecting the spreadsheet with password (X) Printing a spreadsheet (XI) Saving the spreadsheet in various formats.	**10**
2. Prepare presentation using presentation application	1. Introduction to presentation 2. Software packages for presentation 3. Creating a new presentation 4. Adding a slide 5. Deleting a slide 6. Entering and editing text 7. Formatting text 8. Inserting clipart and images 9. Slide layout 10. Saving a presentation 11. Printing a presentation document.	1. Demonstration and practice on the following: (I) Listing the software packages for presentation (II) Explaining the features of presentation (III) Creating a new presentation (IV) Adding a slide to presentation. (V) Deleting a slide (VI) Entering and edit text (VII) Formatting text (VIII) Inserting clipart and images (IX) Sliding layout (X) Saving a presentation (XI) Printing a presentation document	**15**
Total			**25**

Unit 4: Entrepreneurial Skills - IV			
Learning Outcome	**Theory (10 hrs)**	**Practical (15 hrs)**	**Total Duration (25 Hrs)**
1. Identify the general and entrepreneurial behavioural competencies	1. Barriers to becoming entrepreneur 2. Behavioural and entrepreneurial competencies – adaptability/decisiveness, initiative/perseverance, interpersonal skills, organizational skills, stress management, valuing service and diversity	1. Administering self- rating questionnaire and score responses on each of the competencies 2. Collect small story/ anecdote of prominent successful entrepreneurs 3. Identify entrepreneurial competencies reflected in each story and connect it to the definition of behavioural competencies 4. Preparation of competencies profile of students	**10**
2. Demonstrate the knowledge of self-assessment of behavioural competencies	1. Entrepreneurial competencies in particular: self - confidence, initiative, seeing and acting on opportunities, concern for quality, goal setting and risk taking, problem solving and creativity, systematic planning and efficiency, information seeking, persistence, influencing and negotiating, team building	1. Games and exercises on changing entrepreneurial behaviour and development of competencies for enhancing self-confidence, problem solving, goal setting, information seeking, team building and creativity	**15**
Total			**25**

Unit 5: Green Skills - IV			
Learning Outcome	**Theory (05 hrs)**	**Practical (10 hrs)**	**Total Duration (15 Hrs)**
1. Identify the role and importance of green jobs in different sectors	1. Role of green jobs in toxin-free homes, 2. Green organic gardening, public transport and energy conservation, 3. Green jobs in water conservation 4. Green jobs in solar and wind power, waste reduction, reuse and	1. Listing of green jobs and preparation of posters on green job profiles 2. Prepare posters on green jobs.	**15**

	recycling of wastes, 5. Green jobs in green tourism 6. Green jobs in building and construction 7. Green jobs in appropriate technology 8. Role of green jobs in Improving energy and raw materials use 9. Role of green jobs in limiting greenhouse gas emissions 10. Role of green jobs minimizing waste and pollution 11. Role of green jobs in protecting and restoring ecosystems 12. Role of green jobs in support adaptation to the effects of climate change		
Total			**15**

CLASS 12

Part B–Vocational Skills

S.No.	Units	Duration (Hrs)
1.	Unit 1: Cultivation of Commercial Crop-I	35
2.	Unit 2: Cultivation of Commercial Crop-II	35
3.	Unit 3: Growing off Annuals	35
4.	Unit 4: Growing of Perennials	30
5.	Unit 5: Post Harvest Management and Value Addition	30
	Total	**165**

Unit 1: Cultivation of Commercial Flower – I			
Learning Outcome	**Theory (15 hrs)**	**Practical (20 hrs)**	**Duration (35 Hrs)**
1. Cultivate ornamental and flowering crops (Aster, Chrysanthemum, Tuberose, Gladiolus, Golden rod and Daisy)	1. Suitable climate, soil, improved varieties and propagation 2. Showing, planting and irrigation 3. Manures & fertilizer requirement 4. Describe special horticultural operations	1. Identification of ornamental and flowering crops. 2. Demonstration of sowing & planting 3. Demonstration of special horticulture operations 4. Demonstration of irrigation in given	**20**

Unit 1: Cultivation of Commercial Flower – I			
Learning Outcome	**Theory (15 hrs)**	**Practical (20 hrs)**	**Duration (35 Hrs)**
	5. Describe Harvest and post harvest operations	crop 5. Demonstration of harvesting and grading	
2. Manage insect pests and diseases	1. Describe Insect pests & their management 2. Diseases and their management 3. Precaution taken during seed treatment. 4. Precaution taken during preparation of spray solution and spraying	1. Identification of pest and diseases 2. Identification of insecticides and fungicides used 3. Demonstration of seed treatment. 4. Enlist important pests and diseases with control measures 5. Demonstration of procedures of spraying	**15**
Total			**35**

Unit 2: Cultivation of Commercial Crop-II			
Learning Outcome	**Theory (15hrs)**	**Practical (20hrs)**	**Duration (35 Hrs)**
1. Cultivate common flowing crops viz.: a. Rose, b. Gaillardia, c. Marigold d. Jasmine spp. e. Crossandra	1. Importance of flower crops viz. rose, gaillardia, marigold, Jasmine, crossardira. 2. Various uses of flowers.	1. Identification of flowering plants 2. Enlist different uses of flowers.	**10**
2. Demonstration of Cultivation practices	1. Suitable climate, soil, improved varieties, propagation & planting, Intercultural operations, Irrigation, Manures and Fertilizers 2. Sowing of seed & planting	1. Preparation of seed bed 2. Demonstration of sowing of seed 3. Demonstration of inter culture operations 4. Demonstration of application of manures and fertilizers 5. Enlist common Varieties of given crops	**15**
3. Care and maintenance of flowering plants	1. Special Horticultural practices/ operations 2. Control insect pest & diseases 3. Precaution taken during use of	1. Identification of insect pest and diseases. 2. Identification of insecticide and fungicides 3. Demonstration of	**05**

Unit 2: Cultivation of Commercial Crop-II			
Learning Outcome	**Theory (15hrs)**	**Practical (20hrs)**	**Duration (35 Hrs)**
	pesticides and weedicides	application of pesticides	
4. Harvest and post harvest operations	1. Describe Harvesting and post harvest handling of flowers 2. Collection and storage of seeds	1. Identification of the stage of harvesting of flowers 2. Demonstration of harvesting 3. Demonstration of post harvest operations 4. Demonstration of grading of flowers	**05**
Total			**35**

Unit 3: Growing of Annuals			
Learning Outcome	**Theory (12 hrs)**	**Practical (23 hrs)**	**Duration (35 Hrs)**
1. Define and classify annuals	1. Define annuals 2. Importance of annuals 3. Classification of annuals 4. Define Herbaceous border	1. Identification of annuals 2. Enlist the annuals as per season	**8**
2. Cultivate annuals (common annuals)	1. Preparation of seed bed 2. Types of seed sowing. 3. Transplanting seedlings 4. Application of manures & fertilizers 5. Irrigation methods 6. Cultural operations 7. Harvesting and post harvest operations	1. Demonstration of preparation of seed bed 2. Demonstration of sowing of seed 3. Demonstration of planting and transplanting 4. Demonstration of application of manures & fertilizers 5. Demonstration of cultural operation 6. Identification of harvesting stage 7. Demonstration of irrigation in field	**15**
3. Care and maintenance	1. Common insect pest and diseases of annuals 2. Management of insect pest and diseases 3. Methods of weed control 4. Safety precaution taken during	1. Identification of common insect pest 2. Identification of common diseases 3. Identification of common weeds 4. Identification of pesticides 5. Demonstration of spraying of	**12**

Unit 3: Growing of Annuals			
Learning Outcome	**Theory (12 hrs)**	**Practical (23 hrs)**	**Duration (35 Hrs)**
	application of chemicals	pesticides	
Total			**35**

Unit 4: Growing of Perennials			
Learning Outcome	**Theory (10hrs)**	**Practical (20 hrs)**	**Duration (30 Hrs)**
1. Classify perennials (tree, shrubs and climbers)	1. Define perennials 2. What are different types of perennials 3. Use of perennials	1. Enlist different types of perennials	**05**
2. Growing of Ornamental trees (Common ornamental trees)	1. Ornamental tree and their importance 2. Classification of ornamental trees 3. Growing practices of ornamental trees (I) What types of soils are suitable for ornamental trees and its preparation (II) Manure & fertilizer and Irrigation (III) Insect pest and disease control 4. What are important culture practices (I) Weeding (II) Training & Pruning	1. Identification of ornamental trees 2. Enlist flowering & foliage trees 3. Identification of manures and fertilizers 4. Calculation of the quantity of manures and fertilizers	**05**
3. Grow ornamental shrubs (Common shrubs)	1. Define ornamental shrubs 2. Classification of ornamental shrubs 3. Differentiate between ornamental tree and shrubs 4. Growing practices of ornamental shrubs (I) Manures & fertilizers (II) Irrigation (III) Soil preparation (IV) Insect pest and disease control 5. Important cultural practices (I) Weeding (II) Training & Pruning 6. Propagation of shrubs 7. What is topiary	1. Enlist flowering shrubs. 2. Identification of common shrubs 3. Selection of plant for topiary	**05**

Unit 4: Growing of Perennials			
Learning Outcome	**Theory (10hrs)**	**Practical (20 hrs)**	**Duration (30 Hrs)**
4. Grow Climbers and creepers (Common climbers and creepers)	1. Define climbers and creepers 2. Classification of climbers and creepers 3. Growing practices for climbers and creepers (I) Manure & fertilizer (II) Irrigation (III) Soils preparation (IV) Major insect pest & disease and their control 4. Important culture practices 5. Propagation of climbers and creepers? 6. What is pergola	1. Enlist various climbers and creepers 2. Identification of climbers and creepers 3. Selection of plants for pergola	**05**
5. Growing of indoor plants (Common plants)	1. What are indoor plants 2. Classification of indoor plants 3. Importance of indoor plants 4. Preparation of potting mixture 5. Potting, repotting and depotting 6. Planting of Indoor plants 7. Care and maintenance of Indoor plants 8. Define Bonsai and plants suitable for bonsai	1. Enlist indoor plants 2. Identification of indoor plants 3. Identification of plant for Bonsai 4. Demonstration of irrigation in pot plants 5. Demonstration of potting, repotting and depotting 6. Demonstration of care and maintenance activities	**05**
6. Care and maintenance	1. Caring of avenue trees and shrubs 2. Maintaining the shape of shrub 3. Training of climbers & creepers	1. Demonstration of training of plants 2. Demonstration of pruning of plants 3. Demonstration of caring and maintenance and activities of Indore plant	**05**
Total			**30**

Unit 5: Post Harvest Management and Value Addition			
Learning Outcome	**Theory (10 hrs)**	**Practical (20 hrs)**	**Duration (30 Hrs)**
1. Describe post harvest	1. Proper stage of harvesting	1. Identification of proper stage for	**08**

Unit 5: Post Harvest Management and Value Addition			
Learning Outcome	**Theory (10 hrs)**	**Practical (20 hrs)**	**Duration (30 Hrs)**
management and harvesting stage	2. Suitable time and stage to harvest flower 3. Post harvest activities required in flower cultivation. 4. Post harvest losses	harvesting 2. Demonstration of harvesting of flower crops	
2. Demonstrate post harvesting handling of cut and loose flowers	1. What care should be taken after harvest of flowers? 2. Importance of flower grading 3. Pulsing & holding solution and its preparation 4. Define bruising	1. Enlist different grades of flower for marketing 2. Demonstration of preparation of pulsing solution 3. Demonstration of preparation of holding solution 4. Demonstration of grading of flowers	**07**
3. Value addition in flowers	1. Types of different value added products of flower (bouquet, garland etc.) 2. Preparation of gulkand and rose-water 3. Define flowers 4. Describe flower arrangement	1. Enlist different value added products 2. Draw a flow chart showing gulkund and lose water preparation 3. Demonstration of drying of flowers	**08**
4. Demonstrate Packaging storage, transportation and marketing of flowers	1. Describe different methods of storage 2. How the flowers are packed 3. How flowers are transported 4. What is cold chain and its importance	1. Enlist different flower packing materials 2. Identify packing materials 3. Enlist address of flower buyers 4. Demonstrate packing of flowers	**07**
Total			**30**

6. ORGANISATION OF FIELD VISITS

In a year, at least 3 field visits/educational tours should be organised for the students to expose them to the activities in the workplace.

Visit a farm and observe the following: Location, Site, types of flower crops, Office building, Store, Pot yard, Packing Yard, Seed bed, Nursery bed, Water tank/Tubewell, Gate and fencing. During the visit, students should obtain the following information from the owner or the supervisor of the nursery:

1. Area under flower crops and its layout
2. Types of flower plants raised
3. Type of rootstock/seed used
4. Methods of propagation adopted
5. Whether plants raised by micro propagation
6. Number of flower crops grow annually
7. Quantity of flower sold annually
8. Sale procedure
9. Manpower engaged
10. Total expenditure of cultivation of flower crops
11. Total annual income
12. Profit/Loss (Annual)
13. Any other information

7. LIST OF EQUIPMENT AND MATERIALS

The list given below is suggestive and an exhaustive list should be prepared by the vocational teacher. Only basic tools, equipment and accessories should be procured by the Institution so that the routine tasks can be performed by the students regularly for practice and acquiring adequate practical experience.

1. Cross staff
2. Tape
3. Crow bar
4. Rope
5. Pick axe
6. Kudali
7. Khurpi
8. Wheel hoe
9. Trenching hoe
10. Transplanting trovel
11. Dibbler
12. Planting board
13. Grafting knife
14. Mixed budding and grafting knife
15. Secateur
16. Garden hatchet
17. Sickle
18. Looping shear
19. Water can
20. Sprinkler
21. Pegs
22. Ranging rod
23. Pruning knife
24. Budding knife
25. Hand cultivator
26. Hand weeder
27. Weeding fork
28. Garden hoe
29. Shovel
30. Digging fork
31. Garden rake
32. Hand cultivator
33. Grass shear
34. Hedge shear
35. Tree pruner
36. Pruning saw
37. Bill hook
38. Spade
39. Dutch-hoe
40. Bonsai set
41. Bonsai Cutter
42. Small Trowel
43. Big Trowel
44. Rake
45. Trowels and rake
46. Sprayer
47. Duster
48. Garden tractor

List of Chemical and fertilizers

49. Compost
50. Farm yard manure
51. Vermicompost
52. Oil cake
53. Leaf manure.
54. Urea
55. DAP
56. Ammonium sulphate
57. Complex fertilizers
58. Potassium sulphate
59. Murate of potash
60. Systemic fungicides
61. Non-systemic fungicides
62. Biopesticides
63. Peat
64. Formalin
65. Bavestin
66. Sulphur
67. Insecticide
68. Indofil-45
69. Neem cake
70. Growth regulator/ harmone

8. VOCATIONAL TEACHER'S/ TRAINER'S QUALIFICATION AND GUIDELINES

Qualification and other requirements for appointment of vocational teachers/trainers on contractual basis should be decided by the State/UT. The suggestive qualifications and minimum competencies for the vocational teacher should be as follows:

S. No.	Qualification	Minimum Competencies	Age Limit
1.	Post-graduation in Horticulture from a recognized Institute/University, with at least 1 year work experience	(I) Effective communication skills (oral and written) (II) Basic computing skills.	18-37 years (as on Jan. 01 (year)) Age relaxation to be provided as per Govt. rules

Vocational Teachers/Trainers form the backbone of Vocational Education being imparted as an integral part of Rashtriya Madhyamik Shiksha *Abhiyan* (RMSA). They are directly involved in teaching of vocational subjects and also serve as a link between the industry and the schools for arranging industry visits, On-the-Job Training (OJT) and placement.

These guidelines have been prepared with an aim to help and guide the States in engaging quality Vocational Teachers/Trainers in the schools. Various parameters that need to be looked into while engaging the Vocational Teachers/Trainers are mode and procedure of selection of Vocational Teachers/Trainers, Educational Qualifications, Industry Experience, and Certification/Accreditation.

The State may engage Vocational Teachers/Trainers in schools approved under the component of Vocationalisation of Secondary and Higher Secondary Education under RMSA in the following ways:

(i) Directly as per the prescribed qualifications and industry experience suggested by the PSS Central Institute of Vocational Education(PSSCIVE), NCERT or the respective Sector Skill Council(SSC)

OR

(ii) Through accredited Vocational Training Providers accredited under the National Quality Assurance Framework (NQAF*) approved by the National Skill Qualification Committee on 21.07.2016. If the State is engaging Vocational Teachers/Trainers through the Vocational Training Provider (VTP), it should ensure that VTP should have been accredited at NQAF Level 2 or higher.

* *The National Quality Assurance Framework (NQAF) provides the benchmarks or quality criteria which the different organisations involved in education and training must meet in order to be accredited by competent bodies to provide government-funded education and training/skills activities. This is applicable to all organizations offering NSQF-compliant qualifications.*

The educational qualifications required for being a Vocational Teacher/Trainer for a particular job role are clearly mentioned in the curriculum for the particular NSQF compliant job role. The State should ensure that teachers / trainers deployed in the schools have relevant technical competencies for the NSQF qualification being delivered. The Vocational Teachers/Trainers preferably should be certified by the concerned Sector Skill Council for the particular Qualification Pack/Job role which he will be teaching. Copies of relevant certificates and/or record of experience of the teacher/trainer in the industry should be kept as record.

To ensure the quality of the Vocational Teachers/Trainers, the State should ensure that a standardized procedure for selection of Vocational Teachers/Trainers is followed. The selection procedure should consist of the following:

(i) Written test for the technical/domain specific knowledge related to the sector;
(ii) Interview for assessing the knowledge, interests and aptitude of trainer through a panel of experts from the field and state representatives; and
(iii) Practical test/mock test in classroom/workshop/laboratory.

In case of appointment through VTPs, the selection may be done based on the above procedure by a committee having representatives of both the State Government and the VTP.

The State should ensure that the Vocational Teachers/Trainers who are recruited should undergo induction training of 20 days for understanding the scheme, NSQF framework and Vocational Pedagogy before being deployed in the schools.

The State should ensure that the existing trainers undergo in-service training of 5 days every year to make them aware of the relevant and new techniques/approaches in their sector and understand the latest trends and policy reforms in vocational education.

The Head Master/Principal of the school where the scheme is being implemented should facilitate and ensure that the Vocational Teachers/Trainers:

(i) Prepare session plans and deliver sessions which have a clear and relevant purpose and which engage the students;
(ii) Deliver education and training activities to students, based on the curriculum to achieve the learning outcomes;
(iii) Make effective use of learning aids and ICT tools during the classroom sessions;
(iv) Engage students in learning activities, which include a mix of different methodologies, such as project based work, team work, practical and simulation based learning experiences;
(v) Work with the institution's management to organise skill demonstrations, site visits, on-job trainings, and presentations for students in cooperation with industry, enterprises and other workplaces;
(vi) Identify the weaknesses of students and assist them in upgradation of competency;
(vii) Cater to different learning styles and level of ability of students;
(viii) Assess the learning needs and abilities, when working with students with different abilities
(ix) Identify any additional support the student may need and help to make special arrangements for that support;
(x) Provide placement assistance

Assessment and evaluation of Vocational Teachers/Trainers is very critical for making them aware of their performance and for suggesting corrective actions. The States/UTs should ensure that the performance of the Vocational Teachers/Trainers is appraised annually. Performance based appraisal in relation to certain pre-established criteria and objectives should be done periodically to ensure the quality of the Vocational Teachers/Trainers. Following parameters may be considered during the appraisal process:

1. Participation in guidance and counselling activities conducted at Institutional, District and State level;
2. Adoption of innovative teaching and training methods;
3. Improvement in result of vocational students of Class X or Class XII;
4. Continuous upgradation of knowledge and skills related to the vocational pedagogy, communication skills and vocational subject;
5. Membership of professional society at District, State, Regional, National and International level;
6. Development of teaching-learning materials in the subject area;
7. Efforts made in developing linkages with the Industry/Establishments;
8. Efforts made towards involving the local community in Vocational Education
9. Publication of papers in National and International Journals;
10. Organisation of activities for promotion of vocational subjects;
11. Involvement in placement of students/student support services.

9. LIST OF CONTRIBUTORS

Sl. No.	Name and address of expert
1.	Dr. Devender S. Dahiya, Professor, Department of Horticulture, CCS Haryana Agricultural University, Hissar, Haryana
2.	Dr. S.K. Sehrawat, Professor, Department of Horticulture, College of Agriculture, CCS Haryana Agricultural University, Hissar, Haryana
3.	Dr. Deepa H. Diwedi, Associate Professor and Head, Department of Floriculture, Dr. B.R. Ambedkar University, Vidhya Vihar, Rae Bareli Road, Lucknow – 226 025, UP
4.	Dr. Balaji Shreedhar Kulkarni, Professor and Head, Department of Floriculture and Landscape Architecture, KRC, College of Horticulture, Arabhavi – 591 218, Tq. Gokak, District Belgaum, Karnataka
5.	Dr. R.K. Jaiswal, Professor, Department of Horticulture, College of Agriculture, Old Sehore Road, Indore
6.	Dr. S.A. Ali, Principal Scientist, Department of Horticulture, RAK College of Agriculture, Sehore, Madhya Pradesh
7.	Shri Rajiv Kumar, Director, Business Development, Oshnic Agro-vision Pvt. Ltd., C-113, Vidhya Nagar, Houshangabad Road, Bhopal
8.	Dr. Y.D. Khan, Full-Time Teacher, Tulsa Bai Kawal Junior College, Patur – 444 501, District Akola, Maharashtra
9.	Shri Gajanan D. Mawal, Full-Time Teacher, Late SAU Vijayatai Deshmukh Junior College, Alegaon, Patur – 444 511

	District Akola, Maharashtra
10.	Dr. Uadal Singh, Assistant Professor, Department of Agriculture and Animal Husbandry, PSSCIVE, NCERT, Shyamla Hills, Bhopal–462 013, Madhya Pradesh
11.	Dr. Rajiv Kumar Pathak, Professor and Head, Department of Agriculture and Animal Husbandry, PSSCIVE, NCERT, Shyamla Hills, Bhopal–462 013, Madhya Pradesh

10. LIST OF REVIEWERS

Dr. D. L. N. Rao
Emeritus Scientist
Indian Institute of Soil Science
Nabi Bagh, Berasia Road, Bhopal

PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION

Shyamla Hills, Bhopal- 462 013, M.P., India