LEARNING OUTCOME-BASED
VOCATIONAL CURRICULUM

Job Role: Microirrigation Technician

(QUALIFICATION PACK: Ref. Id. AGR/Q1002)

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- 462 002, 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.

M K Gandhi

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June, 2017

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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 Microirrigation Technician. 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 Educational 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 learning outcome-based 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 course coordinator Vinay Swarup Mehrotra for his untiring efforts and contributions in the development of this learning outcome-based curriculum. The contributions of Ranjeet Singh Chaudhari, Ph.D., Principal Scientist, Indian Institute of Soil Science (IISS), Bhopal is 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 and Technology, PSSCIVE in the development of the curriculum for employability skills are duly acknowledged.

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PSSCIVE Team

CONTENTS

	Foreword			(i)
	Preface			(ii)
	Acknowledgement			(iv)
1.	Course Overview			1
2.	Scheme of Units			2
3.	Teaching/Training Activities			3
4.	Assessment and Certification			4
5.	Unit Contents	**CLASS 11**		
		Part A	**Employability Skills**	
			Unit 1: Communication Skills – III	7
			Unit 2: Self-management Skills – III	9
			Unit 3: Information and Communication Technology Skills – III	10
			Unit 4: Entrepreneurial Skills – III	12
			Unit 5: Green Skills – III	13
		Part B	**Vocational Skills**	
			Unit 1: Introduction to Microirrigation System	14
			Unit 2: Installation of Sprinkler Irrigation System	15
			Unit 3: Operation and Maintenance of Microirrigation System	16
		CLASS 12		
		Part A	**Employability Skills**	
			Unit 1: Communication Skills – IV	18
			Unit 2: Self-management Skills – IV	19
			Unit 3: Information and Communication Technology Skills – IV	20
			Unit 4: Entrepreneurial Skills – IV	22
			Unit 5: Green Skills – IV	23
		Part B	**Vocational Skills**	
			Unit 1: Layout and Installation of Microirrigation System	24
			Unit 2: Maintenance of Drip Irrigation System	25
			Unit 3: Occupational Health, Hygiene and First Aid Practices	26
6.	Organisation of Field Visits			27
7.	List of Equipment and Materials			27
8.	Vocational Teacher's/ Trainer's Qualification and Guidelines			28
9.	List of Contributors			30

1. COURSE OVERVIEW

The Microirrigation Technician is responsible for designing microirrigation systems, procuring the materials and equipment required for their installation, and installing, testing, and commissioning the systems on farms. The role also involves training farmers in the proper operation and use of microirrigation systems, ensuring a reliable and adequate water supply to crops, diagnosing and troubleshooting system-related issues, and carrying out routine maintenance to ensure efficient and uninterrupted system performance.

The course is divided into two parts: Part A - Employability Skills: This part focuses on developing essential employability competencies required for effective performance in the workplace. It covers the following areas: communication skills, self-management skills, information and communication technology skills, entrepreneurial skills and green skills. Part B - Vocational Skills: This part focuses on developing the knowledge and practical competencies required to perform the role of a Microirrigation Technician. It covers microirrigation system design, procurement of materials and equipment, installation, testing and commissioning of irrigation systems, farmer training, water supply management, troubleshooting, and routine maintenance to ensure efficient and reliable system operation.

COURSE OUTCOMES: On completion of the course, students 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 a computer;
- ☐ Demonstrate self-management skills;
- ☐ Demonstrate the ability to provide a self-analysis in the context of entrepreneurial skills and abilities;
- ☐ Demonstrate knowledge of the importance of green skills in meeting the challenges of sustainable development and environmental protection;
- ☐ Demonstrate knowledge of processes and preparations involved in the basic agricultural practices for production of different crops in different seasons;
- ☐ Design the micro-irrigation system;
- ☐ Procure the materials required for setting up the micro-irrigation system;
- ☐ Install, test and commission the micro-irrigation system in the farm;
- ☐ Train the farmers to use the irrigation system;
- ☐ Troubleshoot the problems with the microirrigation system at the farm;
- ☐ Demonstrate knowledge of the design, operation and maintenance of drip and sprinkler irrigation systems in different crops;

COURSE REQUIREMENTS: The learner should have the basic knowledge of science.
COURSE LEVEL: On completion of this course, a student can take up a course for a job role in Agriculture.

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:

CLASS 11			
	Units	**No. of Hours for Theory and Practical 300**	**Max. Marks for Theory and Practical 100**
Part A	**Employability Skills**		
	Unit 1: Communication Skills – III	25	**10**
	Unit 2: Self-management Skills – III	25	
	Unit 3: Information and Communication Technology Skills – III	20	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	15	
	Total	**110**	**10**
Part B	**Vocational Skills**		
	Unit 1: Introduction to Microirrigation System	45	
	Unit 2: Installation of Sprinkler Irrigation System	65	
	Unit 3: Operation and Maintenance of Microirrigation System	55	
	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 300**	**Max. Marks for Theory and Practical 100**
Part A	**Employability Skills**		
	Unit 1: Communication Skills – IV	25	**10**
	Unit 2: Self-management Skills – IV	25	
	Unit 3: Information and Communication Technology Skills – IV	20	
	Unit 4: Entrepreneurial Skills – IV	25	
	Unit 5: Green Skills – IV	15	
	Total	**110**	**10**
Part B	**Vocational Skills**		
	Unit 1: Layout and Installation of Microirrigation System	75	
	Unit 2: Maintenance of Drip Irrigation System	70	
	Unit 3: Occupational Health, Hygiene and First Aid Practices	20	
	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 the classroom, laboratory/ workshops and field visits. Students should be taken on 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 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 or teaching aids, such as audio-video materials, colour slides, charts, diagrams, models, exhibits, handouts, online teaching materials, etc. to transmit knowledge and impart training to the students.

PRACTICAL WORK IN LABORATORY/WORKSHOP

Practical work may include, but is not limited to, hands-on training, simulated training, role play, case-based studies, exercises, etc. Equipment and supplies should be provided to enhance the hands-on learning experience of students. Only trained personnel should teach specialised 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. ASSESSMENT AND CERTIFICATION

The National Skills Qualifications Framework (NSQF) is based on outcomes referenced to the National Occupational 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 can 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. Standardised 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 internal assessment and the second an external examination, including a 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 an 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 a 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 blueprint for the question paper may be as follows:

Duration: 3 Hrs **Maximum Marks: 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 and 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**

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.

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.

5. UNIT CONTENTS

CLASS 11

Part A: Employability Skills

S.No.	Unit	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 SKILLS–III

S.No.	Learning Outcome	Theory (10 Hrs)	Practical (15 Hrs)	Duration Hrs)
1.	Demonstrate knowledge of effective communication	1. Introduction to communication 2. Importance of communication 3. Elements of communication 4. Perspectives in communication 5. Effective communication	1. Role-play on the communication process 2. Group discussion on factors affecting perspectives in communication 3. Classroom discussion on the 7Cs of effective communication (i.e. Clear, Concise, Concrete, Correct, Coherent, Courteous and Complete) 4. Chart making on elements of communication	03
2.	Demonstrate verbal communication	1. Verbal communication 2. Public speaking	1. Role-play of a phone conversation 2. Group exercise on delivering speech and practicing public speaking	02
3.	Demonstrate non-verbal communication	1. Importance of non-verbal communication 2. Types of non-verbal communication 3. Visual communication	1. Role-play on non-verbal communication 2. Group exercise and discussion on Do's and Don'ts to avoid body language mistakes 3. Group activity on methods of	02

			communication	
4.	Speak using correct pronunciation	1. Pronunciation basics 2. Speaking properly 3. Phonetics 4. Types of sounds	1. Group exercises on pronouncing words	01
5.	Demonstrate the knowledge of assertive communication style	1. Important communication styles 2. Assertive communication 3. Advantages of assertive communication 4. Practicing assertive communication	1. Group discussion on communication styles 2. Group discussion on observing and sharing communication styles	03
6.	Demonstrate the knowledge of saying No	1. Steps for saying 'No' 2. Connecting words (Conjunctions)	1. Group discussion on how to respond 2. Group activity on saying 'No'	02
7.	Identify and use parts of speech in writing	1. Capitalisation 2. Punctuation 3. Basic parts of speech 4. Supporting parts of speech	1. Group exercises on identifying parts of speech 2. Group exercises on constructing sentences 3. Group exercises on nouns	03
8.	Write sentences and paragraphs	1. Parts of a sentence 2. Types of object 3. Types of sentences 4. Paragraph	1. Exercises on making sentences 2. Activity on active and passive voice 3. Assignment on writing different types of sentences	02
9.	Communicate with people	1. Greetings 2. Introducing self and others	1. Role-play on formal and informal greetings 2. Role-play on introducing someone 3. Practice session and group discussion on greeting different people	02
10.	Introduce self to others and write about oneself	1. Talking about self 2. Filling out a form to write about self	1. Practicing self-introduction to write about self 2. Filling up forms to write about self	01
11.	Ask Questions	1. Types of questions 2. Asking close-	1. Exercise on asking different types of	01

		ended and open-ended questions	questions 2. Group activity on framing open and close-ended questions	
12.	Communicate information about family to others	1. Words that show relations in the family	1. Practice talking about family 2. Role-play on relations	01
13.	Describe habits and routines	1. Concept of habits and routines	1. Group discussion on habits and routines 2. Group activity on describing routines	01
14.	Ask or give directions to others	1. Asking for directions to a place 2. Giving directions for a place	1. Role-play on asking and giving directions to a place 2. Identifying symbols used for giving directions	01
			Total	**25**

UNIT 2: SELF-MANAGEMENT SKILLS–III

S.No.	Learning Outcome	Theory (10 Hrs)	Practical (15 Hrs)	Duration (25 Hrs)
1.	Identify and analyse own strengths and weaknesses	1. Knowing yourself 2. Identifying strengths and weaknesses 3. Difference between interests and abilities	1. Activity on writing aims in life 2. Preparing a worksheet on interests and abilities	03
2.	Demonstrate personal grooming	1. Guidelines for dressing and grooming	1. Role-play on dressing and grooming standards 2. Self-reflection activity on dressing and grooming	04
3.	Maintain personal hygiene	1. Importance of personal hygiene 2. Three steps to personal hygiene 3. Essential steps of hand washing	1. Role-play on personal hygiene 2. Assignment on personal hygiene	03
4.	Demonstrate the knowledge of working in a team and participating in group activities	1. Describe the benefits of teamwork 2. Working in a team	1. Assignment on working in a team 2. Self-reflection on team work	03

5.	Describe the importance of networking skills	1. Benefits of networking skills 2. Steps to build networking skills	1. Group exercise on networking in action 2. Assignment on networking skills	03
6.	Describe the meaning and importance of self-motivation	1. Self-motivation 2. Types of motivation 3. Qualities of Self-motivated people	1. Activity on staying motivated 2. Assignment on reasons hindering motivation	03
7.	Set SMART goals	1. Meaning of goals and purpose of goal-setting 2. Setting SMART (Specific, measurable, attainable, realistic and timebound) goals	1. Assignment on setting SMART goals 2. Activity in developing long-term and short-term goals using the SMART method	03
8.	Apply time management strategies and techniques	1. Time management 2. Steps for effective time management	1. Preparing a checklist of daily activities 2. Preparing to-do-list	03
			Total	**25**

UNIT 3: INFORMATION AND COMMUNICATION TECHNOLOGY SKILLS -III

S.No.	Learning Outcome	Theory (08 Hrs)	Practical (12 Hrs)	Duration (20 Hrs)
1.	Create a document on the word processor	1. Introduction to ICT 2. Advantages of using (Information and communication technology) a word processor 3. Work with LibreOffice Writer	1. Group activity on demonstration and practice of the following: i. Creating a new document ii. Typing text iii. Saving the text iv. Opening and saving files on Microsoft Word/Libre Office Writer	02
2.	Identify the basic interface of LibreOffice	1. Standard user interface of LibreOffice writer i. Status bar ii. Menu bar iii. Tool bar	1. Group activity on using the basic user interface of LibreOffice writer 2. Group activity on working with Microsoft Word	02

		iv. Making a text bold		
3.	Save, close, open and print document	1. Saving a word document 2. Closing a word document 3. Open an existing document 4. Print a word document	1. Group activity on performing the functions for saving, closing, and printing documents in LibreOffice Writer 2. Group activity on performing the functions for saving, closing, and printing documents in Microsoft Word	02
4.	Format text in a word document	1. Changing style and size of text 2. Aligning text and 3. Cutting, Copying, Pasting text 4. Finding and replacing	1. Group activity on formatting text in LibreOffice Writer 2. Group activity on formatting text in Microsoft Word	02
5.	Check spelling and grammar in a word document	1. Starting a spell checker 2. Short-cut menu for spell checker 3. Autocorrecting spellings	1. Group activity on checking spelling and grammar using LibreOffice Writer 2. Group activity on checking spelling and grammar using Microsoft Word	02
6.	Insert lists, tables, pictures, and shapes in a word document	1. Insert bullet list 2. Inserting the following in word document i. Number list ii. Tables iii. Pictures iv. Shapes	1. Practical exercise of inserting lists and tables using LibreOffice Writer	03
7.	Insert header, footer and page number in a word document	1. Inserting the following in a word document i. Header ii. Insert footer iii. Insert page number iv. Page count	1. Practical exercises of inserting header, footer and page numbers in LibreOffice Writer and Microsoft Word	03

8.	Demonstrate the use of track change option in a word document	1. Tracking changes in LibreOffice Writer 2. Manage option 3. Comparing documents	1. Group activity on performing changes in track mode in LibreOffice Writer and Microsoft Word	04
			Total	**20**

UNIT 4: ENTREPRENEURIAL SKILLS– III

S.No.	Learning Outcome	Theory (10 Hrs)	Practical (15 Hrs)	Duration (25 Hrs)
1.	Differentiate between different kinds of businesses	1. Introduction to entrepreneurship 2. Types of business activities- manufacturing, trading, and service	1. Role-play on different kinds of businesses around us	03
2.	Describe the significance of entrepreneurial values	1. Values of an Entrepreneur 2. Case study on qualities of an entrepreneur	1. Role-play on qualities of an entrepreneur	03
3.	Describe the attitudinal changes required to become an entrepreneur	1. Difference between the attitude of an entrepreneur and an employee	1. Interviewing employees and entrepreneurs	03
4.	Describe the importance of thinking like an entrepreneur	1. Problems of entrepreneurs 2. Problem-solving 3. Thinking like an entrepreneur to solve problems	1. Group activity on identifying and solving problems	04
5.	Generate business ideas	1. The business cycle 2. Principles of idea creation 3. Generating a business idea 4. Case studies	1. Group activity to create business ideas	04
6.	Describe customer needs and the importance of conducting a customer survey	1. Understanding customer needs 2. Conducting customer survey 3. Knowing competitors for understanding supply	1. Group activity for conducting a customer survey	04

7.	Create a business plan	1. Importance of planning 2. Preparing a business plan 3. Principles to follow for growing a business 4. Case studies	1. Group activity on developing a business plan	04
			Total	**25**

UNIT 5: GREEN SKILLS–III

S.No.	Learning Outcome	Theory (07 Hrs)	Practical (08 Hrs)	Duration (15 Hrs)
1.	Describe the importance of the main sectors of the green economy	1. Important sectors of green economy- i. Agriculture ii. Energy resources iii. Construction iv. Fisheries v. Forestry vi. Tourism vii. Transport viii. Water Management ix. Waste management x. Manufacturing xi. Industry	1. Group discussion on sectors of the green economy 2. Preparing posters on various sectors for promoting the green economy	06
2.	Describe policies for the green economy	1. Policies for a green economy	1. Group discussion on initiatives for promoting the green economy 2. Writing an essay or a short note on the important initiatives for promoting a green economy	03
3.	Describe the role of various stakeholders in the green economy	1. Stakeholders in the green economy	1. Group discussion on the role of stakeholders in the green economy 2. Making solar bulbs	03
4.	Describe the role of government and private	1. Role of the government in promoting a green economy	1. Group discussion on the role of government and	03

	agencies in the green economy	2. Role of private agencies in promoting green economy	private agencies in promoting a green economy 2. Preparing posters on green sectors	
			Total	**15**

Part B: Vocational Skills

S.No.	Units	Duration (Hrs)
1.	Introduction to Microirrigation System	45
2.	Installation of Sprinkler Irrigation System	65
3.	Operation and Maintenance of Microirrigation System	55
Total		**165**

UNIT 1: INTRODUCTION TO MICROIRRIGATION SYSTEM

S.No.	Learning Outcome	Theory (25 Hrs)	Practical (20 Hrs)	Duration (45 Hrs)
1.	Describe the microirrigation systems.	1. Features of microirrigation system 2. Classification of microirrigation system: • Drip irrigation system • Sprinkler irrigation system • Other types of microirrigation system 3. Advantages of microirrigation system	1. Visit a farm, where a microirrigation system has been installed, and discuss the advantages, useful crops, and common maintenance problems with the owner	15
2.	Explain the land gradient and suitability of irrigation system.	1. Land gradient 2. Selection of irrigation method 3. Irrigation systems: • Gravity flow irrigation system • Pressurised irrigation system 4. Factors influencing suitability of irrigation system:	1. Visit a nearby agricultural field and study the types of soil, water sources, crops grown, different irrigation methods used, and the reasons for using a particular irrigation method.	15

		• Natural conditions • Crops • Technology • Labour inputs • Costs		
3.	Describe design and layout of microirrigation system.	1. Design and layout: • Collection of basic farm data. • Analysis of the data. • Preparation of microirrigation system layout. 2. Water sources • Tanks • Canals • Wells 3. Design of drip irrigation system. 4. Design of sprinkler irrigation system. 5. Units of measurement in microirrigation system.	1. Visit an agricultural farm having a drip irrigation system, and study its layout and design. 2. Prepare a drip irrigation layout of 200 x 100 m under different water source placements. 3. Prepare a chart showing symbols for specific components (sprinkler-full, sprinkler-half, pressure gauge, screen filter, head control unit, and flush valve).	15
			Total	**45**

UNIT 2: INSTALLATION OF SPRINKLER IRRIGATION SYSTEM

S.No.	Learning Outcome	Theory (30 Hrs)	Practical (35 Hrs)	Duration (65 Hrs)
1.	Describe installation of components in sprinkler irrigation system.	1. Checks for installation. 2. Tools and equipment required for installation. 3. Fittings and other accessories. 4. Installing sprinkler irrigation system: • Installation of head control unit. • Preparation of trenches of a microirrigation system. • Installation of pipes.	1. Visit an agricultural farm and study the joining or coupling of various components with pipes. Familiarise with couplers and sprinkler heads used in microirrigation system.	25

		• Installation of valves. • Installation of main, sub-mains and laterals.		
2.	Describe tools and material for installation of sprinkler irrigation system.	1. Pipe wrench 2. Spanner set (preferably adjusting sly wrench) 3. Drill machine 4. Drill guide 5. Screwdriver 6. Pliers 7. Hacksaw blade with frame 8. Measuring tape 9. Hose punch 10. Take-off tool 11. Solvent cement 12. Teflon tape 13. Jute 14. GI threaded joint synthetic compound 15. Pencil or marker 16. Hot plate	1. Visit a store selling agriculture tools, equipment and material or an institute providing training in agriculture.	25
3.	Explain the classification and suitability of pumps.	1. Classification of pumps: • Positive displacement pumps. • Non-positive displacement pumps. 2. Solar-powered pump. 3. Suitability of pump. 4. Determination of total head. 5. Determining horsepower of pump.	1. Draw a diagram of a cross-sectional view of centrifugal pump and label the parts. 2. Visit an agricultural farm and study the type of pumps installed for irrigation. 3. Read the manual for installation and maintenance of a centrifugal pump.	15
			Total	**65**

UNIT 3: OPERATION AND MAINTENANCE OF MICROIRRIGATION SYSTEM

S.No.	Learning Outcome	Theory (20 Hrs)	Practical (35 Hrs)	Duration (55 Hrs)
1.	Describe operation and monitoring of	1. Operation and efficiency of sprinklers.	1. Visit a farm where a sprinkler irrigation system is installed and study the distance	35

	sprinkler irrigation system.	2. Maintenance of sprinklers.	between sprinkler heads, the types of sprinkler heads, and the wetted area around the sprinkler heads, then prepare a note based on observations. 2. Visit a farm where a sprinkler irrigation system is installed, study and prepare a note based on observations.	
2.	Demonstrate the maintenance of sprinkler irrigation system .	1. Maintenance schedule for pumps. 2. Principles for maintenance of pipes, fittings and sprinkler heads. 3. Minor maintenance.	1. Visit an agricultural farm where a sprinkler irrigation system is installed to check if any sprinkler heads are missing, broken, clogged, spraying water too far. 2. Prepare a maintenance schedule for a sprinkler irrigation system.	10
3.	Explain maintenance of drip irrigation system.	1. Maintenance of distribution network. 2. System flushing. 3. Types of filters and their maintenance: • Hydro-cyclone filter • Sand filter • Screen filter • Disc filter	1. Obtain samples of used screen and disc filters that need cleaning, and demonstrate the step-wise cleaning process for a disc filter.	10
			Total	**55**

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

S.No.	Learning Outcome	Theory (10hrs)	Practical (15 hrs)	Duration (25 hrs)
1.	Demonstrate active listening skills	1. Active listening - listening skills and stages of active listening 2. Overcoming barriers to active listening	1. Group discussion on factors affecting active listening 2. Preparing posters of steps for active listening 3. Role-play on negative effects of not listening actively	10
2.	Identify the parts of speech	1. Parts of speech – using capitals, punctuation, and basic parts of speech, supporting parts of speech	1. Group practice on identifying parts of speech 2. Group practice on constructing sentences	10
3.	Write sentences	1. Writing simple sentence 2. Writing complex sentences 3. Types of object 4. Types of sentences	1. Group work on writing sentences and paragraphs 2. Group work on	05

		i. Active and Passive sentences ii. Statement/ Declarative sentence iii. Question/ Interrogative sentence iv. Emotion/ Reaction or Exclamatory sentence v. Order or Imperative sentence vi. Paragraph writing	practicing writing sentences in active or passive voice 3. Group work on writing different types of sentences (i.e., declarative, exclamatory, interrogative and imperative)	
	Total			**25**

UNIT 2: SELF-MANAGEMENT SKILLS – IV

S.No.	Learning Outcome	Theory (10 hrs)	Practical (15 hrs)	Duration (25 hrs)
1.	Describe the various factors influencing motivation and positive attitude	1. Motivation and positive attitude 2. Intrinsic and extrinsic motivation 3. Positive attitude – ways to maintain positive attitude 4. Stress and stress management – ways to manage stress	1. Role-play on avoiding stressful situations 2. Activity on listing negative situations and ways to turn them to positive	15
2.	Demonstrate the Knowledge of becoming oriented	1. Becoming result-oriented 2. Goal setting – examples of result-oriented goals	1. Group activity on listing aim in life	05
3.	Describe the importance of self-awareness and the basic personality traits, types and disorders	1. Steps towards self-awareness 2. Personality and basic personality traits 3. Common personality	1. Group discussion on self-awareness	05

		disorders- i. Suspicious ii. Emotional and impulsive iii. Anxious 4. Steps to overcome personality disorders		
	Total			**25**

UNIT 3: INFORMATION AND COMMUNICATION TECHNOLOGY SKILLS - IV

S.No.	Learning Outcome	Theory (06 hrs)	Practical (14 hrs)	Duration (20 hrs)
1.	Identify the components of a spreadsheet application	1. Getting started with a spreadsheet - types of a spreadsheet 2. Steps to start LibreOffice Calc., 3. Components of a worksheet	1. Group activity on identifying components of spreadsheet in LibreOffice Calc.	02
2.	Perform basic operations in a spreadsheet	1. Opening workbook and entering data – types of data, steps to enter data, editing and deleting data in a cell 2. Selecting multiple cells 3. Saving the spreadsheet in various formats 4. Closing the spreadsheet 5. Opening the spreadsheet 6. Printing the spreadsheet	1. Group activity on working with data on LibreOffice Calc.	03
3.	Demonstrate the knowledge of working with data and formatting text	1. Using spreadsheet for addition – adding value directly, adding by using cell address, using a mouse to select values in a formula, using sum function, copying and moving formula	1. Group activity on formatting a spreadsheet in LibreOffice Calc 2. Group	02

		2. Formatting cell and content 3. Changing text style and font size 4. Aligning text in a cell 5. Highlighting text	activity on performing basic calculations in LibreOffice Calc.	
4.	Demonstrate the knowledge of using advanced features in spreadsheet	1. Advanced features in Spreadsheet i. Sorting data ii. Filtering data iii. Protecting spreadsheet with password	1. Group activity on sorting data in LibreOffice Calc	02
5.	Make Use of software for making slides presentations	1. Steps to start LibreOffice Impress 2. Adding text to a presentation	1. Group practice on working with LibreOffice Impress tools	02
6.	Demonstrate the knowledge of opening, closing and slide presentations	1. Printing a presentation	1. Group activity on closing and saving a presentation in LibreOffice Impress	03
7.	Demonstrate the knowledge of working with slides	1. Working with slides and text in a presentation- adding slides to a presentation, deleting slides, adding and formatting text, highlighting text, aligning text and changing text colour	1. Group practice on working with font styles in LibreOffice Impress	03
8.	Demonstrate the use of advanced features in a presentation	1. Advanced features used in a presentation 2. Inserting shapes in the presentation 3. Inserting clipart and images in a presentation 4. Changing slide layout	1. Group activity on changing slide layout on LibreOffice Impress	03
	Total			**20**

UNIT 4: ENTREPRENEURIAL SKILLS-IV

S.No.	Learning Outcome	Theory (10hrs)	Practical (15hrs)	Duration (25hrs)
1.	Describe the types and qualities of entrepreneurs	1. Entrepreneurship and entrepreneur 2. Characteristics of entrepreneurship 3. Entrepreneurship- art and science 4. Qualities of a successful entrepreneur 5. Types of entrepreneurs 6. Roles and functions of an entrepreneur 7. What motivates an entrepreneur? 8. Identifying opportunities and risk-taking 9. Startups	1. Group discussion on the topic 'An entrepreneur is not born but created' 2. Conducting a classroom quiz on various aspects of entrepreneurship	10
2.	Identify the barriers to entrepreneurship	1. Barriers to entrepreneurship i. Environmental barriers ii. Faulty business plan iii. Personal barriers	1. Group discussion about "What we fear about entrepreneurship" 2. Activity on taking an interview of an entrepreneur	05
3.	Identify the attitude that makes an entrepreneur successful	1. Entrepreneurial attitude	1. Activities will be decided by the teacher	05
4.	Demonstrate the Knowledge of Entrepreneurial Attitude and Competencies	1. Entrepreneurial competencies i. Decisiveness ii. Initiative iii. Interpersonal skills- positive iv. attitude, stress	1. Activity on "My entrepreneurial attitude"	05

		v. management vi. Perseverance vii. Organizational skills- time management, goal setting, efficiency, managing quality		
	Total			**25**

UNIT 5: GREEN SKILLS-IV

S.No.	Learning Outcome	Theory (05 hrs)	Practical (10 hrs)	Duration (15 hrs)
1.	Identify the benefits of the green jobs	1. Green jobs 2. Benefits of green jobs 3. Green jobs in different sectors: i. Agriculture ii. Transportation iii. Water conservation iv. Solar and wind energy v. Eco-tourism vi. Building and construction vii. Solid waste management viii. Appropriate technology	1. Group discussion on the importance of green job	8
2.	State the importance of green jobs	1. Importance of green jobs in the following i. Limiting greenhouse gas emissions ii. Minimising waste and pollution iii. Protecting and restoring ecosystems iv. Adapting to the effects of	1. Preparing posters on green jobs 2. Group activity on tree plantation	7

		climate change		
	Total			**15**

Part B: Vocational Skills

S.No.	Units	Duration (Hrs)
1.	Layout and Installation of Microirrigation System	75
2.	Maintenance of Drip Irrigation System	70
3.	Occupational Health, Hygiene and First Aid Practices	20
Total		**165**

UNIT 1: LAYOUT AND INSTALLATION OF MICROIRRIGATION SYSTEM

S.No.	Learning Outcome	Theory (35 Hrs)	Practical (40 Hrs)	Duration (75 Hrs)
1.	Demonstrate layout of microirrigation system.	1. Components of a microirrigation system. 2. Pre-requisites for installation. 3. Pre-requisites during installation. 4. Tools, equipment, and materials for installation of microirrigation system.	1. Identify and name the components of the microirrigation system in the provided table. 2. Installation of drip irrigation system.	20
2.	Demonstrate installation of head unit.	1. Components of head control unit: • Water pump • Valves • Filters • Pressure gauge	1. Building and labelling a model of a microirrigation head unit. 2. Designing and testing simple filters for microirrigation.	20
3.	Demonstrate installation of pipe network.	1. Microirrigation pipes. 2. Fittings and accessories.	1. Identify and name the connectors and accessories of drip irrigation in the provided table. 2. Pipe joining and assembly. 3. Drip tape installation.	20

4.	Describe emission devices and fertigation system.	1. Classification of emission device. 2. Fertigation.	1. Visit a farmland and study the various types of drippers or emitters in the drip irrigation system. 2. Drip emitter installation. 3. Identify and name the drippers in the provided table.	15
			Total	**75**

UNIT 2: MAINTENANCE OF DRIP IRRIGATION SYSTEM

S.No.	Learning Outcome	Theory (30 Hrs)	Practical (40 Hrs)	Duration (70 Hrs)
1.	Operation of drip irrigation system.	1. Pump Unit 2. Bypass valves 3. Filters 4. Fertigation Unit 5. Mainline and Sub-main pipelines 6. Laterals and Emitters	1. Pump flow rate and pressure measurement. 2. Filter pressure and efficiency check. 3. Visit a farmland to discuss challenges farmers face during the operation of drip irrigation system.	20
2.	Monitor drip irrigation system.	1. Differences in system pressure and flow. 2. Water quality. 3. Flush water quality. 4. Mechanical damage.	1. Visit a farmland to understand drip irrigation in relation to pressure, flow, water quality, and mechanical damage. 2. Water quality and flush water monitoring.	15
3.	Explore maintenance of head unit	1. Maintenance of a drip irrigation system. 2. Maintenance of filters. 3. Maintenance of hydro-cyclone filter. 4. Maintenance of	1. Study the various parts of the filter used in drip irrigation system or a filter used in water filter system. 2. Drip irrigation system inspection.	15

		media filters. 5. Maintenance of screen filter. 6. Maintenance of disc filter. 7. Maintenance of pump unit.	3. Cleaning and maintaining a sand filter.	
4.	Maintenance of pipe distribution network and emission devices.	1. System flushing 2. Daily maintenance 3. Weekly or fortnightly periodic maintenance 4. Permitted chemicals 5. Acid treatment 6. Acid injection 7. Chlorine treatment 8. Precautions 9. Application 10. Maintenance after chemical treatment	1. Flushing the drip irrigation system. 2. Chemical treatment of drip irrigation system.	20
			Total	**70**

UNIT 3: OCCUPATIONAL HEALTH, HYGIENE AND FIRST AID PRACTICES

S.No.	Learning Outcome	Theory (10 Hrs)	Practical (10 Hrs)	Duration (20 Hrs)
1.	Describe different types of hazards.	1. Types of hazards. 2. Principles of safety and health. 3. Preventing risks and hazards. 4. Preventing electric shocks.	1. Electrical safety inspection. 2. Hazard classification and risk assessment. 3. Hazard identification exercise.	10
2.	Demonstrate first aid.	1. First-aider. 2. Basic lifesaving first aid procedures. 3. First aid techniques. 4. First aid kit. 5. Precautions to prevent common diseases. 6. Basic exercises. 7. Occupational hazards. 8. Risks at workplace.	1. Identification of agricultural hazards and first aid practices. 2. First aid for burns.	5

		9. Preventing slips, trips and falls (including Slips, Trips, and Falls). 10. Postures for carrying weight. 11. Methods to avoid posture-related problems. 12. Measures to adopt while lifting and carrying loads.		
3.	Explain agricultural waste management and disposal.	1. Types of agricultural wastes. 2. Concerns about agricultural waste management. 3. Management processes. 4. Benefits of waste management. 5. Use of personal protective equipment. 6. Manual handling. 7. Risk control.	1. Identification of agricultural waste and generation of ideas for waste management.	5
			Total	**20**

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 an agricultural field with microirrigation system installed in it. During the visit, students should obtain the following information from the owner or the supervisor of the farm:

1. Area under microirrigation systems
2. Layout of the microirrigation system
3. Plants raised
4. Manpower engaged
5. Operation and maintenance of microirrigation system
6. Total expenditure incurred in installation
7. Any other information

7. LIST OF EQUIPMENT AND MATERIALS

The tools, equipment and materials required for training are quite expensive, therefore, 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. A micro-irrigation kit may be procured for training and regular field visits should be organised to provide opportunities to the students/trainees for observation and hands-on practice.

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 Agriculture/ Horticulture from a recognized Institute /University, with at least 1-year work/ teaching experience	• Effective communication skills (oral and written) • 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

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