LEARNING OUTCOME BASED VOCATIONAL CURRICULUM

JOB ROLE: General Mason

(QUALIFICATION PACK: Ref.Id. CON/Q0103)

SECTOR: Construction

Classes 11 and 12

PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION
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.

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Construction- General Mason

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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 learning outcome 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 **General Mason**. 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 competency 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 apply 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 competency based modular curricula and courseware to the States and other stakeholders under the PAB (Project Approval Board) approved project of *RashtriyaMadhyamikShiskhaAbhiyan* (RMSA) of MHRD.

Finally, for transforming the proposed curriculum design into a vibrant reality, 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 amendments made in the curriculum document.

The PSSCIVE, Bhopal remains committed in bringing about reforms in the vocational education 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.

DR. 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 RashtriyaMadhyamikShikshaAbhiyan* (RMSA), Ministry of Human Resource Development, Government of India and 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 **Construction Skill Council of India (ASCI)** for their contribution in development and approval of the Qualification Pack and National Occupation Standards (NOSs).

We are grateful to the expert contributors and reviewers for their earnest effort and contributions in the development of this learning outcome based curriculum. Their names are acknowledged in the list of contributors and reviewers.

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

Dr. Subrat Roy, Professor, Department of Vocational Education and Entrepreneurship Development, National Institute of Technical Teachers Training and Research (NITTTR), Shyamla Hills, Bhopal for reviewing this curriculum.

We are also grateful to the Course Coordinator. **Prof. Saurabh Prakash**, Professor & Head, Department of Engineering & Technology for developing this curriculum.

The contribution of Mr. Avinash Kumar Singh, Consultant is acknowledged.

The assistance provided by Mr Akhilesh Kashiv, Computer Operator Grade III in typing and composing of the material is duly acknowledged.

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PSSCIVE Team

CONTENTS

1. COURSE OVERVIEW

COURSE TITLE: Construction-General Mason

At Construction site General Mason worker performs the basic operations related to construction of a building. He identify and demonstrate safe use of hand and power tools/equipment used in construction. He Construct masonry structures using brick / bloc, execute plaster on internal & external surfaces of masonry and RCC structure, Carry out waterproofing works for structures using cementitious materials etc. Construction site workers provide customers all the information available with them to help customers to select and care for building.

COURSE OBJECTIVES: 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 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;
- ☐ Identify and control hazards in the workplace that pose a danger or threat to their safety or health, or that of others.
- ☐ Identify and demonstrate safe use of hand and power tools/equipment used in construction;
- ☐ Gain insight into General Mason job role and its career progression
- ☐ Construct masonry structures using brick / bloc
- ☐ Execute plaster on internal & external surfaces of masonry and RCC structure
- ☐ Carry out waterproofing works for structures using cementitious materials
- ☐ Build structures using random rubble masonry
- ☐ Carry out IPS / Tremix flooring
- ☐ Work effectively in a team to deliver results at a construction site
- ☐ Plan and organize work to meet expected outcomes
- ☐ Work according to personal health, safety and environment protocol at construction site

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

COURSE LEVEL: This is a course for class XI and XII. On completion of this course, a student can take up a higher level course in the area of Construction sector.

COURSE DURATION: **400 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 9 and 10 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	
		110	**10**
Part B	**Vocational Skills**		
	Unit 1 : Masonry Work	60	**40**
	Unit 2 : Plastering work	60	
	Unit 3 : Waterproofing work	45	
		165	**40**
Part C	**Practical Work**		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
		10	**35**
Part D	**Project Work/Field Visit**		
	Practical File/Student Portfolio	10	10
	Viva Voce	05	05
		15	**15**
	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	20	**10**
	Unit 2 : Self-management Skills-IV	10	
	Unit 3 : Information and Communication Technology Skills-IV	20	
	Unit 4 : Entrepreneurial Skills-IV	15	
	Unit 5 : Green Skills-IV	10	
		75	**10**
Part B	**Vocational Skills**		
	Unit 1: Random rubble masonry	80	
	Unit 2: IPS / Tremix flooring	85	40
		165	**40**
Part C	**Practical Work**		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
		10	**35**
Part D	**Project Work/Field Visit**		
	Practical File/Student Portfolio	10	10
	Viva Voce	05	05
		15	**15**
	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 aides, 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. ASSESSMENT 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, and 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: 30**

		No. of Questions			
S.No.	**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)	**2**	**1**	**2**	**10**
2.	Understanding – (Comprehension – to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	**1**	**2**	**2**	**11**
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**	**1**	**1**	**05**
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**	**1**	**0**	**02**
5.	Evaluation – (Appraise, judge, and/or justify the value or worth of	**0**	**1**	**0**	**02**

	a decision or outcome, or to predict outcomes based on values)				
	Total	**3x1=3**	**6x2=12**	**5x3=15**	**30** **(14 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.

CONTINUOUS AND COMPREHENSIVE EVALUATION

Continuous and Comprehensive Evaluation (CCE) refers to a system of school-based evaluation of students that covers all aspects of student's development. In this scheme, the term `continuous' is meant to emphasize that evaluation of identified aspects of students `growth and development' is a continuous process rather than an event, built into the total teaching-learning process and spread over the entire span of academic session. The second term `comprehensive' means that the scheme attempts to cover both the scholastic and the co-scholastic aspects of students' growth and development. For details, the CCE manual of Central Board of Secondary Education (CBSE) or the guidelines issued by the State Boards on the procedure for CCE should be followed by the Institutions.

5. UNIT CONTENTS

CLASS 11

Part A: Employability Skills

S. NO.	Units	Duration
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 (10 hrs)	Practical (15 hrs)	Duration (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: • Sentence • Phrase • Kinds of Sentences • Parts of Sentence • Parts of Speech • Articles • 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 techniques	1 Meaning and importance of time management – setting and prioritizinggoals, creating a schedule, making lists of tasks, balancing work and leisure, using	1. Game on time management 2. Checklist preparation 3. To-do-list preparation	**05**

	different optimization tools to break large tasks into smaller tasks.		
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: • Listing the features of word processing • Listing the software packages for word processing • Opening and exit the word processor • 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: • Editing the text • Word wrapping and alignment • Changing font type, size and face • Inserting header and footer • 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,	1. Listing of entrepreneurial values by the students. 2. Group work on identification of entrepreneurial values and their roles after	

	independence, outstanding performance and respect for work	listing or reading 2-3 stories of successful entrepreneur 3. Exhibiting entrepreneurial values in Ice breaking, rapport building, group work and home assignments	**10**
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**

Part B: Vocational Skills

S. No.	Units	Duration (Hrs.)
1.	Masonry Work	60
2.	Plastering work	60
3.	Waterproofing work	45
		165

Unit – 1 : Masonry Work

Learning Outcome	Theory *(20Hrs)*	Practical *(40Hrs)*	Duration *(60Hrs)*
1. Draw the sketches of brick work / paver block	1. Basic principles of measurement, simple arithmetic's and conversion of units of measurement 2. Importance of sketches for brick/paver block 3. Reading and interpretation of method statements, formats, permits, protocols, checklists for works	1. Reading and interpreting the sketches/basic working drawing for brick/block	10

2. Identify the various tools used in masonry work	1. Standard specification of all masonry tools and equipment, their care and maintenance 2. How to select and use tools such as measuring tape, trowels, floats, brushes, screed boards, straight edge, concrete	1. Identification of tools used in masonry work 2. Draw sketches of the tools 3. Perform a check of level using various leveling instrument	05
3. Carryout vertical and horizontal alignment of masonry work	mixer, mortar boards and stands, shovels, wheelbarrows, hawks, joint rules, mason's square, buckets, power leads, spade, volume box, water measuring jug etc. for masonry works 3. Basic levelling instruments like spirit level and water levelling, its setting and use 4. Determining vertical and horizontal alignment using thread line, spirit level, plum bob etc		05
4. Identify the various types of construction materials	1. Type of raw material like cement, sand, aggregate, bricks/ blocks; the size and physical attributes of bricks/blocks	1. Identify the raw material and do the measurement	05
5.Appreciate the importance of water cement ratio	1. Knowledge of cement mix proportion and its importance		05
6. Demonstrate the laying of brick/paver block	1. Basic knowledge of water cement ratio		05
4. Calculate the quantity for masonry work	1. Importance of quantity of masonry work 2. Standard sizes of masonry materials quantity	1. Visit to market for survey of materials used in masonry work	05
5. Prepare a bond used in brick work	1. Knowledge of English, Flemish, stretcher and header bond 2. Process of laying and fixing brick/blocks in position with uniform joints 3. Various adhesives used in brick/block work	1. Prepare a English bond with and without mortar 2. Prepare a Flemish bond with and without mortar 3. Prepare a Stretcher bond with and without 4. Prepare a header bond with and without	05
6. Practice basic masonry activity	1. Method of layout and marking for brick/block	1. Performing visual checks for	05

	work 2. Vertical and horizontal alignment using thread line, spirit level, plum bob etc. 3. 3-4-5 method for squaring corners 4. Method of carrying out checks for preparatory works like surface preparation 5. Techniques for cutting, chiselling of bricks as per closure using appropriate tools	brick/block, cement, aggregate 2. Estimate the quantity of material required for work. 3. Demonstrate the breaking of breaks to required size and shape. 4. Build brick/block wall as per standards tolerance as per relevant drawing. 5. Demonstrate checks for maintaining line and level of each course of brick/block wall 6. Demonstrate setting out of 90° corners using builders square or 3-4-5 method 7. Demonstrate preparation of lime/cement mortar for pointing as per specification	
7. Construct the staircase and arches	1. Marking and layout of tread and risers for staircase 2. Laying and fixing of bricks in staircase 3. Different components of arch and its terminology 4. Laying and fixing bricks in arches providing key stones and levelling and aligning appropriately 5. Importance of providing proper joint spacing and gauging in arches	1. Demonstrate raking and cleaning of joints as specified prior to drying of bonding mortar 2. Demonstrate set out of tread and riser for staircase 3 Demonstrate building of staircase maintaining bond, alignment and plumb. 4. Demonstrate building of arches, cutting creepers around corners and filling of joints for arches.	05
8. Carryout the block activity	1. Various techniques for repairing and finishing in brick/block work 2. Process of pointing in brick work • Flush pointing • Keyed/grooved pointing • Recessed pointing	1. Demonstrate filling of joints with mortar to obtain specified type of pointing using appropriate tools. 2. Demonstrate building of manhole as per required	05

	• Struck pointing 3. Different mortar mix used for pointing 4.Various tools used for pointing and raking 5. Various method of curing of masonry structure	drawing as per specifications 3. Demonstrate fixing of paver blocks 4. Demonstrate installations and fixing of arch elements for building arches. 5. Demonstrate removal of deteriorated elements from masonry works using appropriate tools. 6. Demonstrate reinstallation of bricks to match adjacent surfaces. 7. Demonstrate proper filling and raking of repaired work and it's bonding and matching with adjacent surfaces.	

Unit 2: Plastering work

Learning Outcome	Theory *(20Hrs)*	Practical *(40Hrs)*	Duration (60 Hrs)
1. Identify types of plastering in a building	1. Importance of plastering 2. Types of plastering	1. Reading and interpreting the sketches/basic working drawing for plastering	**15**
2. State the material used for plastering and tools required for plastering	1. Material required for plastering 2. Various ratios of mix proportion used for plastering on internal and external surfaces 3. Calculation of quantity required for plastering 4. Tools required for plastering	1. Performing visual checks for sand, cement and surface to be plastered 2. Estimate the quantity of material required for work. 3. Checking and ensuring that the cement mortar mix to confirm to specified proportion 4. Selecting tools and performing checks to confirm their workability	**20**

3. Demonstrate the plastering work	1. Method of plastering for various types of surfaces 2. Process of carrying out layout marking and leveling for plastering works 3. Care and precautions to be made during plastering	1. Demonstrate the application of cement slurry and mortar for obtaining desired thickness of plaster using appropriate tools. 2. Demonstrate checks for vertical and horizontal alignment using appropriate tools of plastered surface. 3. Demonstrate setting out of 90° at corners is required. 4. Demonstrate maintaining slope/fall in case of floor plastering.	**25**

Unit 3: Waterproofing works

Learning Outcome	Theory *(20 Hrs)*	Practical *(25Hrs)*	Duration (45 Hrs)
1. State the different components of waterproofing works	1. Waterproofing and its advantages 2. Drawings /sketches relevant to waterproofing works 2. Types of lines, projection and its type, dimensioning, 3. Drawing Sheet Layout	1. Reading and interpreting the sketches/basic working drawing for waterproofing works 2. Do drawings /sketches relevant to waterproofing works 3. Drawing of lines 4. Calculating area for waterproofing	**05**
2. Identifying the tools required for waterproofing work	1. Tools and equipment used for waterproofing works and their standard specifications. 2. Basic levelling tools used in masonry works	1. Identification of tools and equipment used for waterproofing works 2. Selecting tools and performing checks to confirm their workability 3. Handling of tools and equipment	**05**
3. Do layout marking and levelling for waterproofing works	1. Importance of process of carrying out layout marking and levelling for waterproofing works 2. Different material used for waterproofing and various ratios of mix proportion used for cement mortar mix for	1. Identifying common defects in concrete surface prior to waterproofing 2. Identify the material used for waterproofing 3. Calculate the various ratios of mix	**10**

	waterproofing works. 3. Process of performing various visual checks on materials and surface for waterproofing 4. Different type of defects present on concrete surfaces such as caulking etc.	proportion used for cement mortar mix for waterproofing 4. Do the layout marking and leveling for waterproofing works	
4. Preparation of the surface before water proofing	1. Surface preparation method prior to waterproofing such as prime coating 2. Filling holes or depressions by cementitious material 3. Procedure of washing down 4. Method of hacking of existing RCC surface 5. Technique of chipping / scraping of protrusions 6. Process of cleansing free of dust 7 Method of priming or sealing of surface 8. Process of removing sharp edge	1. Demonstrate preparation of surface prior to waterproofing works 2. Do filling holes or depressions by cementitious material 3. Performing visual checks for sand, cement, waterproofing material and surface to be waterproofed. 4. Demonstrate marking and transferring of required levels for maintaining slope in waterproofing works.	**10**
5. Demonstrate the waterproofing work	1. Various methods and techniques used to protect waterproofing of the surface from damage as per the site requirements 2. Different type of waterproofing works 3. Different type of waterproofing compounds used for waterproofing works 4. Procedure for laying out cementitious waterproofing course.	1. Checking of cement mortar mix to confirm to specified proportion. 2. Demonstrate application of waterproofing cementitious to the prepared surface using appropriate tools. 3. Performing visual checks for sand, cement, waterproofing material and surface to be waterproofed	**10**
6. Checking of waterproofing work	1. Procedure for checking water leakage in waterproofed surface 2. Procedure for carrying out horizontal and vertical alignment of waterproofed course 3. Procedure for transferring levels on floor for maintaining desired	1. Identify leakages on the waterproofed surface 2. Demonstrate checks for vertical and horizontal alignment using appropriate tools of waterproofed surface.	**05**

	slope. 4. Procedure for carrying out brick bat coba waterproofing	3. Demonstrate marking and transferring of required levels for maintaining slope in waterproofing Works.	

CLASS 12

Part A: Employability Skills

S. No.	Units	Duration
1.	Communication Skills-IV	20
2	Self-management Skills -IV	10
3	Information and Communication Technology Skills-IV	20
4	Entrepreneurial Skills-IV	15
5	Green Skills-IV	10
	Total	**75**

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: • Sentence • Phrase • Kinds of Sentences • Parts of Sentence • Parts of Speech • Articles • 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**
1. 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	1. Demonstration and practice on the following: • Introduction to the spreadsheet application • Listing the spreadsheet applications • Creating a new worksheet • Opening the workbook and enter text	**10**

	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.	• Resizing fonts and styles • Copying and move the cell data • Sorting and Filter the data • Applying elementary formulas and functions • Protecting the spreadsheet with password • Printing a spreadsheet • Saving the spreadsheet in various formats.	
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: • Listing the software packages for presentation • Explaining the features of presentation • Creating a new presentation • Adding a slide to presentation. • Deleting a slide • Entering and edit text • Formatting text • Inserting clipart and images • Sliding layout • Saving a presentation • 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. arriers to becoming entrepreneur 2. ehavioural 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,	1. Listing of green jobs and preparation of posters on green job profiles 2. Prepare posters on green jobs.	

	3. Green jobs in water conservation 4. Green jobs in solar and wind power, waste reduction, reuse and 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		**15**
Total			**15**

Part B: Vocational Skills

S. NO.	Units	Duration (Hrs.)
1	Unit 1: Random rubble masonry	80
2	Unit 2: IPS / Tremix flooring	85
Total		**165**

Unit 1: Random rubble masonry

Learning Outcome	Theory *(40Hrs)*	Practical *(40Hrs)*	Duration (80 Hrs)
1. Carry out preparatory work for Rubble Masonry	1. Tools and tackles for use in the rubble masonry 2. Estimating amount of materials required to complete a rubble masonry job work	1. Identification and selection of tools for use in the rubble masonry 2. Calculate the amount of materials required to complete a rubble masonry job	**15**

	3. Method of preparation of sub-base 4. Compaction method for base prior to commencement of work 5. Selection of the particular type of surface finish as per the site requirements 6. Method of preparation of the sides, edges, bed of stone to ensure proper bonding of stones 7. Method of mixing mortar for rubble masonry in specified ratio including dry & wet mix 8. Identification of required levels using appropriate tools prior to rubble masonry work	work 3. Preparation of sub-base 4. Compaction of base by using proper tools. 5. Do the surface finishing as per the site requirements 6. Making the sides, edges, bed of stone to ensure proper bonding of stones 7. Mixing of mortar for rubble masonry in specified ratio including dry & wet mix 8. Cleaning of tools after work	
2. Identify the material required for random rubble masonry	1. Materials required for random rubble masonry 2. Properties of cement, proportion of mortar and its workability 3. Stones and its quality for random rubble masonry 4. Method of soaking of stones prior to laying	1. Identify the material required for stone masonry 2. Preparation of cement mortar 3. Checking of the quality of stones used in random rubble masonry 4. Soaking of stones prior to laying	**10**
3. Lay out coursed and un coursed Random Rubble Masonry with undressed or hammer dressed stones	1. Importance of Undressed and hammer dressed stones 2. Laying method for stones to build wall of un-course random rubble or course random rubble 3. Importance of knocking off all projecting corners of the laid stones with joints filled and flushed as per the requirements of the site for the un-course random rubble	1. Checking the stone masonry 2. Laying of stones to build wall of un-course random rubble or course random rubble 3. Knocking off all projecting corners of the laid stones with joints filled and flushed for the un-course random rubble masonry 4. Curing of rubble masonry structure	**15**

	masonry 4. Use large stones at the corners and at jambs to increase the strength as per the un-course random rubble masonry requirements 5. Method of curing of rubble masonry structure		
4. Carry out pointing in stone masonry	1. Importance of pointing, various types of pointing works as per specification using appropriate tools and technique 2. Method of raking of joints as specified prior to drying of bonding mortar 3. Importance of joints cleaning and wetting of surface prior to pointing 4. Method of preparation of lime/ cement mortar for pointing 5. Importance of filling joints with appropriate mortar to obtain specified type of pointing 6. Need of curing of pointing brick	1. Identification of different types of brick 2. Demonstration of uses of tools and equipment used for dressing of bricks 3. Dressing of bricks	**15**
5. Lay out course of Dry Rubble Masonry	1. Use of lay and fix stones for construction of walls without use of mortar 2. Importance of knocking off all projecting corner	1. Laying of fixing stones for construction of walls without use of mortar 2. Practice of knocking off all projecting corner	**15**
6. Check for line, level and alignment	1. Importance of marking and transfer required levels at a regular interval in order to maintain proper slope of finished surface in case of horizontal surface 2. Horizontal and vertical alignment using	1. Practice of marking levels at a regular interval 2 . Checking of horizontal and vertical alignment using appropriate tools	**10**

	appropriate tools		

Unit 2: IPS / Tremix flooring

Learning Outcome	Theory *(40 Hrs)*	Practical *(45 Hrs)*	Duration (85 Hrs)
1. Identify components of IPS/Tremix flooring	1. Meaning of IPS/Tremix flooring 2. Purpose 3. Material used in construction of IPS/Tremix flooring	1. Identify the components of IPS/Tremix flooring 2. Draw the figure of flooring	**10**
2. Identification of special tools for IPS/Tremix flooring	1. Importance of masonry specialized tools for Tremix flooring such as • Vacuum de-watering Pump • Floater Machine • Double beam • Screen Vibrator	1.Identification of components and parts of • Vacuum de-watering Pump • Floater Machine • Double beam • Screen Vibrator	**10**
3. Carry out preparatory work prior to IPS / Tremix flooring	1. Importance of sub-base 2. Process of preparing the sub-base by watering and ramming 3. Steps of checking of levelling, undulation, gaps, misalignment in formwork/reinforcement and ensure proper cover for reinforcement is provided 4. Method /process to preparing the sub-base by watering and ramming	1. Inspecting the work area prior to concreting, ensure levelling in case of any undulations observed on the surface prior to concreting 2. Ensuring the surface is prepared appropriately and report any deviation in slope and alignment in PCC 3. Reporting any gaps in formwork to avoid leakage 4. Reporting any misalignment in formwork/reinforcement and ensure proper cover for reinforcement is provided	**15**
4. Check for line, level and alignment	1. Importance of slope in PCC (Plain Cement Concrete) in a base course 2. Reference levels and its importance 3. Method of marking reference levels and	1. Mark reference level on the wall and transfer this marking to all floor locations using appropriates tools 2. Mark flooring thickness level and	**10**

	transfer the markings to all locations where flooring is to be done	provide dummy level dots at specified intervals for ensuring required slope	
5. Check the materials used for IPS / Tremix flooring in case of manual mixing	1. Various type and grade of cement used 2. Water /cement ratio and type of aggregates 3. Different mix proportion/grade of concrete 4. Need of sequence of concrete pouring and placing 5. Manual mixing of concrete and nominal mix proportions	1. Checking the grade of cement prior to use in case of manual mixing 2. Sieving fine aggregate as per grade requirement 3. Checking concrete mixed in appropriate proportion	**10**
6. Checking the materials used for IPS/Tremix flooring in case of machine mixing	1. Machine mixing of concrete and nominal mix proportions	1. Visually assess the concrete mix for usability and workability 2. Notify superiors for detrimental quality of concrete 3. Ensure specified concrete mix is used at allocated location 4. Check that panels prepared are of specified size and type	**10**
7. Carry out IPS Flooring work	1. Meaning of IPS Flooring, use and advantages 2. Method and advantages of covering to reinforcement with respect to size of reinforcement 3. Method of pouring of concrete in alternate panels 4. How to avoid shrinkage cracks in concrete 5. Various admixtures used in concreting 6. Different type of vibrators, their influence area and use 7. Construction and expansion joints 8. Cutting tools for providing	1. Fixing the glass, aluminium or brass strip in cement mortar with their tops at appropriate level and according to slope 2. Fix the panels made as per specified size 3. Practice of pouring concrete in alternate panels/specified panels as per requirement 4. Removing practice of excess cement slurry and any marks on the surface 5. Levelling the	**15**

	joints 9. Importance of final trowelling process before the concrete is hardened	concrete surface with a straight edge and to the required finish with a wooden float / trowel 6. Spreading cement punning over the IPS concrete for smooth finish surface and allow it to soak into the concrete, as per requirement 7. Setting construction joints and expansion joints as per requirement 8. Pouring concrete to the specified levels to maintaining required	
8. Carry out Tremix / VDF Flooring work	1. Removal of excess water process using Vacuum dewatered machine 2. Importance of screed vibrator and its use 3. Role of hardener usage along with floater machine at the time of finishing the floor surface to increase abrasion resistance of the floor 4. How to provide for space for narrow passage for operating float vibrator along a wall	1. Level the surface and lay stone soling / boulder soling layer 2. Lay the floor with slope maintained in PCC work above the stone soling 3. Remove excess water from the top layer of wet concrete without removing cement of sand particles through vacuum de-watering machines 4. Ensure floater work within green concrete surface 5. Carry out Tremix flooring in specified panel on RCC floors ensuring intactness of rebar and cover 6. Cut grooves on concrete at specified intervals for construction joints 7. provide expansion joints as per requirement 8. carry out curing of finished concrete as per specifications	**05**

		9. Ensure finished levels have required slope Knowledge	

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 construction site and observe the following: Location, Site, construction site, Office building, newly constructed site, building store, construction site. During the visit, students should obtain the following information from the owner or the supervisor of the construction site:

1. Construction activity being taken
2. Residential/Commercial project
3. Technology adopted
4. Type of material used
5. Sale procedure
6. Manpower engaged
7. Total expenditure of project
8. Total annual income
9. Profit/Loss (Annual)
10. 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. Bricks
2. Stone
3. Sand
4. Concrete block
5. Cement
6. Water
7. Trowel
8. Plumb rule and Bob
9. Spirit level
10. Square
11. Line and pins
12. Bolster
13. Brick hammer
14. Scutch
15. Pick Axe
16. Crowbar

17. Chisel
18. Mash Hammer
19. Boaster
20. Spall Hammer
21. Scrabbling Hammer
22. Bevel
23. Spade
24. Picks and Beaters
25. Wooden Float
26. Metal Float
27. Floating Rule
28. Racking Needle
29. Hacking tool
30. Scratcher
31. Spade
32. Trowel (Khurpi)

8. TEACHER'S/TRAINER'S QUALIFICATION

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.	B. Tech in Civil Engineering from a recognized Institute /University, with at least 1 year work / teaching experience Or Diploma in Civil engineering with 2 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 up-gradation 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 up-gradation 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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