

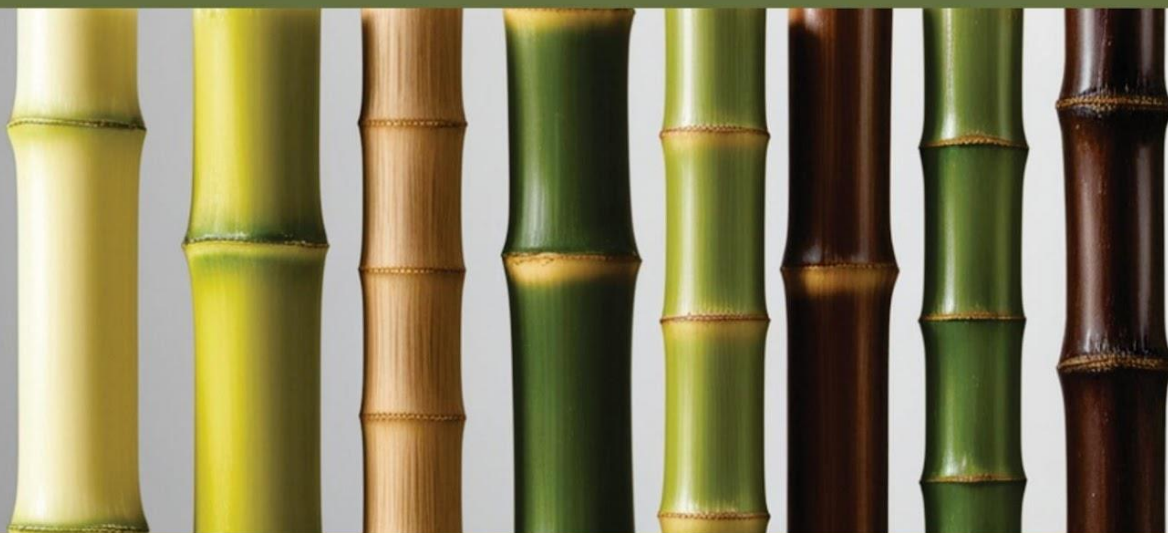
LEARNING OUTCOME BASED VOCATIONAL CURRICULUM

JOB ROLE: BAMBOO WORK ARTISAN

(QUALIFICATION PACK: HCS/Q8702)

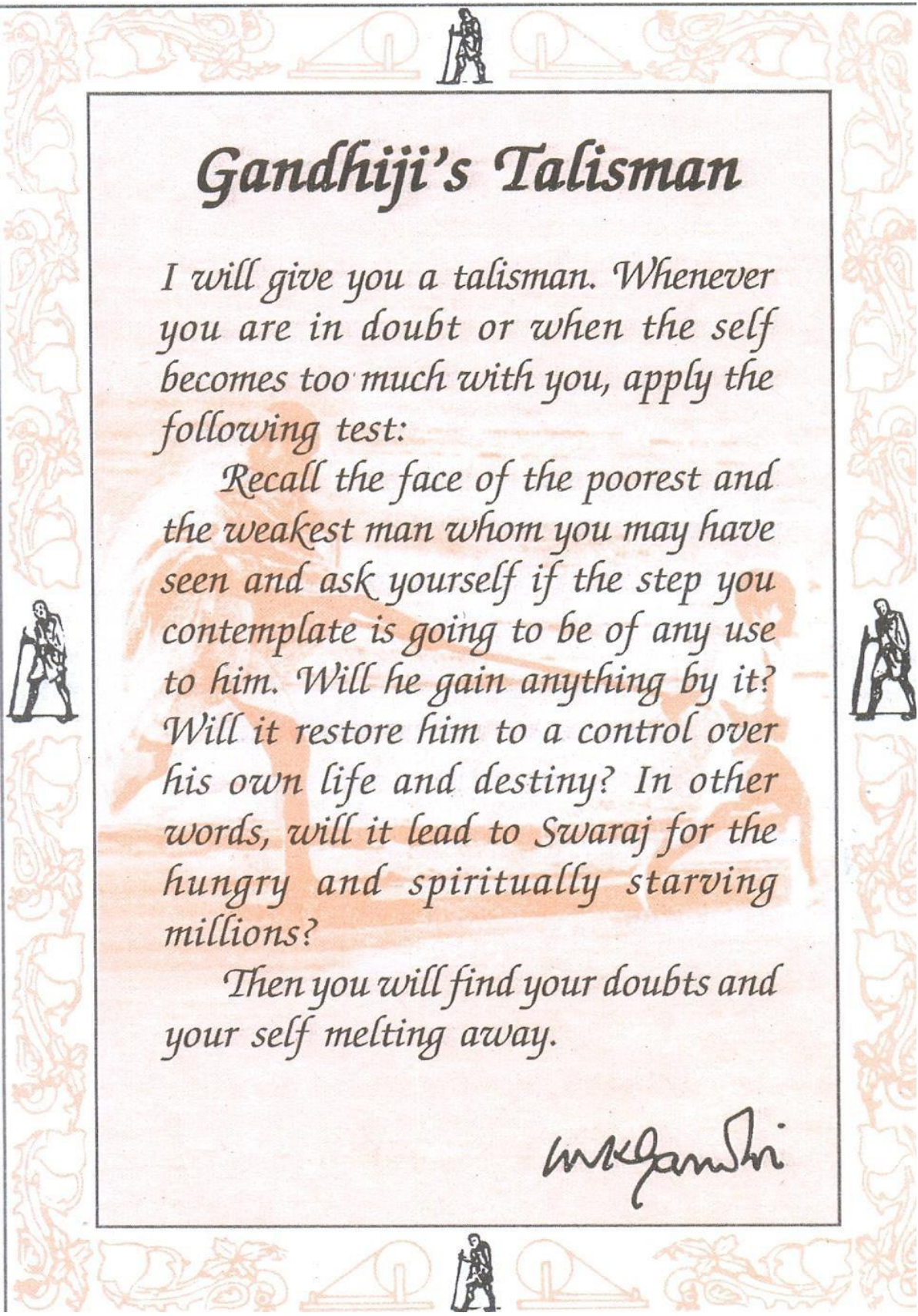
SECTOR: Handicrafts and Carpet Sector

GRADE XI & XII



PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION

Shyamla Hills, Bhopal- 462002, (M.P.), India



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

**LEARNING OUTCOME BASED
VOCATIONAL CURRICULUM**

**Handicrafts and Carpet Sector – Bamboo
Work Artisan**

March, 2025

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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. The curriculum has been developed for the vocational education program introduced under the Centrally Sponsored Scheme of *Samagra Shiksha* of the Ministry of Education (erstwhile, Ministry of Human Resource Development) and is aligned to the National Skills Qualifications Framework (NSQF). The curricula for vocational courses are being developed under the project approved by the Project Approval Board (PAB) of ‘Samagra Shiksha’ which is an overarching program for the school education sector extending from pre-school to Grade 12. The main purpose of the learning outcome-based curricula is to bring about improvement in the teaching-learning process and working competencies 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 **Bamboo Work Artisan (HCS/Q8702)**. The curriculum has been developed for the secondary students of Grade 11 and 12 and is aligned to the National Occupation Standards (NOSs) of a job role identified and approved under the National Skill Qualifications Framework (NSQF).

The curriculum aims to provide children with employability and vocational skills to support occupational mobility and lifelong learning. It will help students to acquire specific occupational skills that meet employers’ immediate needs. The teaching process is to be performed through 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.

Dinesh Prasad Saklani
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 is 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 fulfill the growing aspirations of our youth and the demand for a skilled human resource, the Ministry of Education, (MoE), Government of India introduced the revised Centrally Sponsored Scheme of Vocationalisation of School Education under *Samagra Shiksha* at 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 PSSCIVE Central Institute of Vocational Education (PSSCIVE) was entrusted with the responsibility to develop learning outcome-based curricula, student workbooks, teacher handbooks, and e-learning materials for job roles in various sectors, with growth potential for employment.

The PSSCIVE firmly believes that the vocationalisation of education in the nation needs 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 fulfill the needs of society and the world of work. In order to honor the commitment to the nation, the PSSCIVE 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, policymakers, partner institutions, Vocational Education and Training experts, industry representatives, and teachers. The expert group through a series of consultations, working group meetings, and the use of reference materials develops the national curriculum.

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 the development of the curriculum. We are grateful to MoE and NCERT for the financial support and cooperation in realizing 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 *Samagra Shiksha* of MoE.

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.

Deepak Paliwal
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 *Samagra Shiksha* and the officials of the Ministry of Education, Government of India for the financial support to the project for the development of curricula.

We are grateful to the Director of NCERT for his support and guidance. We also acknowledge the contributions of our colleagues at the Technical Support Group of MoE, and National Council for Vocational Education and Training (NCVET) and the National Skill Development Corporation (NSDC), for their academic support and cooperation in the development of Qualification file and curriculum.

We are thankful to the course coordinator Dr. Pinki Khanna Professor, Head of Department of Home Science and Hospitality Management (DHSHM), Amit Chotrani, Assistant Professor (Contractual), Department of Home Science and Hospitality Management (DHSHM) and the experts for their untiring efforts and contributions to the development of this learning outcome-based curriculum. The contributions made by Dr. Vinay Swarup Mehrotra, Professor and Head, Curriculum Development and Evaluation Centre (CDEC) in the development of the curriculum the employability skills are duly acknowledged.

We acknowledge the assistance provided by Mr. Ashish Kathane, DTP operator (Contractual), PSSCIVE in layout, design, typing and composing of the material.

PSSCIVE Team

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1. COURSE OVERVIEW

COURSE TITLE: Handicrafts and Carpet Sector – Bamboo Work Artisan

A Bamboo Work Artisan is a job-role associated with Handicrafts and Carpet Sector. The primary responsibility of an artisan is to produce diversified range of bamboo products of definite shape and size as per sale advice note or as per market demand. Produce bamboo products with proportionate measurements and fine finishing at a rate which maintains work flow and meets production targets. Identify faults in the product components and maintain report production progress to the supervisor. For all such products to be popularized in the national and international market, they need to be produced as per customer's given standards, hence, the job holder should know how to produce quality bamboo crafted products as per the market demand and set standards. Moreover, Bamboo Work Artisan should be able to develop and demonstrate good eye-hand coordination, good eyesight, eye for detail, basic math skills and vision (including near vision, distance vision, colour vision, peripheral vision, depth perception and ability to change focus).

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

- Apply effective oral and written communication skills to interact with people and customers.
- 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.
- Understand technical terms and tool associate with different types of processes
- Familiarize with Handicraft and Carpet Industry
- Identify and understand the roles and responsibilities of a Bamboo Work Artisan
- Understand Bamboo products development process
- Identify commonly used tools and equipment
- Carry out preparation of bamboo slivers
- Identify and understand bamboo product components and tasks required to assemble them
- Carry out quilling, bending, applique & weaving of bamboo slivers to achieve the final product as per requirement
- Carry out finishing, varnishing, drying & storage of bamboo products
- Contribute to achieve quality bamboo product making
- Contribute to achieve quality in bamboo products making
- Carry out cutting & processing of materials as per given size & shape
- Carry out assembling different materials
- Contribute to achieve quality bamboo utility handicraft assembling
- Develop checklist for different tasks within specified area of finishing and packing
- Demonstrate Bamboo Work Artisan according to specification

- Describe the importance and practice of safety and health measures in the industry
- Explain Strategies for preventing hazards at work place
- Explain measures to control hazards at workplace
- Describe the different quality measures of bamboo Industry
- Report the damage or faults in material and assembly to the responsible person

COURSE REQUIREMENTS: The learner should have a basic knowledge of design, art, and craft

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

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 Grade 11 and 12 opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for grade 11 is as follows:

GRADE 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: Handicraft and Handloom Industry in India	25	
	Unit 2: Bamboo and its Processing	35	

	Unit 3: Tools, Techniques and development of Bamboo Products	35	
	Unit 4: Green Products, Market and Consumerism	30	
	Unit 5: Work Area, Tools and Machines	20	
	Unit 6: Health, Hazards and Safety Measures at Workplace	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

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

GRADE 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: Elements and Principles of Design	25	

	Unit 2: Bamboo Product Diversification and Current Trends	25	
	Unit 3: Measurements & Drawings for Bamboo Furniture	35	
	Unit 4: Sustainability Practices in Bamboo Handicraft	35	
	Unit 5: Effective Teamwork at Work place	25	
	Unit 6: Complying with Workplace Requirements	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 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 or teaching aids, such as audio-video materials, colour slides, charts, diagrams, models, samples 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: 03 Hrs

Max. Mark: 40

S. No.	Typology of Question	No. of Questions			Marks
		Very Short Answer (1 mark)	Short Answer (2 Marks)	Long Answer (3 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, provide an example, or solve a problem)	0	2	1	07
4.	High Order Thinking Skills – (Analysis & Synthesis – Classify, compare, contrast, or differentiate between different pieces of information; Organize and/ or integrate unique pieces of information from a variety of sources)	0	2	0	04
5.	Evaluation – (Appraise, judge, and/or justify the value or worth of a decision or outcome, or to predict outcomes based on values)	0	1	0	02
Total		5x1=5	10x2=20	5x3=15	40 (20 questions)

SKILL ASSESSMENT (PRACTICAL)

Assessment of skills by the students should be done by the assessors/examiners on the basis of practical demonstration of skills by the candidate, using a competency checklist. The competency checklist should be developed as per the National Occupation Standards (NOSs) given in the Qualification Pack for the Job Role to bring about necessary consistency in the quality of assessment across different sectors and Institutions.

The student has to demonstrate competency against the performance criteria defined in the National Occupation Standards and the assessment will indicate that they are 'competent', or are 'not yet competent'. The assessors assessing the skills of the students should possess a current experience in the industry and should have undergone an effective training in assessment principles and practices. The Sector Skill Councils should ensure that the assessors are provided with the training on the assessment of competencies.

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

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

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

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

5. UNIT CONTENTS

GRADE 11

Part A: Employability Skills

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

UNIT 1: COMMUNICATION SKILLS – III			
Learning Outcome	Theory (10 hrs)	Practical (15 hrs)	Duration (25 hrs)
1. Demonstrate knowledge of communication	1. Introduction to communication process 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 the importance of communication and factors affecting perspectives in communication 3. Charts preparation on elements of communication 4. Classroom discussion on the 7Cs (i.e. Clear, Concise, Concrete, Correct, Coherent, Courteous and Complete) for effective communication	03
2. Demonstrate verbal communication	1. Verbal communication 2. Public Speaking	1. Role-play of a phone conversation. 2. Group activity on delivering a speech and practicing public speaking	02
3. Demonstrate non-verbal	1. Importance of non-verbal	1. Role-play on non-verbal communication	02

communication	communication 2. Types of non-verbal communication 3. Visual communication	2. Group exercise and discussion on Do's and Don'ts to avoid body language mistakes 3. Group activity on methods of communication	
4. Demonstrate speech using correct pronunciation	1. Pronunciation basics 2. Speaking properly 3. Phonetics 4. Types of sounds	1. Group activities on practicing pronunciation	01
5. Apply an 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	1. Group discussion on how to say '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 activity on identifying parts of speech 2. Writing a paragraph with punctuation marks 3. Group activity on constructing sentences 4. Group activity on identifying parts of speech	03
8. Write correct sentences and paragraphs	1. Parts of a sentence 2. Types of object 3. Types of sentences 4. Paragraph	1. Activity on framing 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	02

		introducing someone 3. Practice and group discussion on how to greet different people?	
10. Introduce yourself to others and write about oneself	1. Talking about self 2. Filling a form	1. Practicing self-introduction and filling up forms 2. Practicing self-introduction to others	01
11. Develop questioning skill	1. Main types of questions 2. Forming closed and open-ended questions	1. Practice exercise on forming questions 2. Group activity on framing questions	01
12. Communicate information about family to others	1. Names of relatives 2. Relations	1. Practice talking about family 2. Role-play on talking about family members.	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 2. Using landmarks	1. Role-play on asking and giving directions 2. Identifying symbols used for giving directions	01
Total			25

UNIT 2: SELF-MANAGEMENT-III			
Learning Outcome	Theory (10 hrs)	Practical (15 hrs)	Duration (25 hrs)
1. Identify and analyse own strengths and weaknesses	1. Understanding self 2. Techniques for 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 skills	1. Guidelines for dressing and grooming 2. Preparing a personal grooming checklist	1. Role-play on dressing and grooming standards 2. Self-reflection	04

		activity on various aspects of personal grooming	
3. Maintaining 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 teamwork	03
5. Develop networking skills	1. Benefits of networking skills 2. Steps to build networking skills	1. Group activity on networking in action 2. Assignment on networking skills	03
6. Describe the meaning and importance of self-motivation	1. Meaning of self-motivation 2. Types of motivation 3. Steps to building self-motivation	1. Activity on staying motivated 2. Assignment on reasons hindering motivation	03
7. Set goals	1. Meaning of goals and purpose of goal-setting 2. Setting SMART goals	1. Assignment on setting SMART goals 2. Activity on developing long-term and short-term goals using SMART method	03
8. Apply time management strategies and techniques	1. Meaning and importance of time management 2. Steps for effective time management	1. Preparing a checklist of daily activities	03
Total			25

UNIT 3: INFORMATION AND COMMUNICATION TECHNOLOGY-III			
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 a word processor. 3. Work with Libre Office Writer	1. Demonstration and practice of the following: <ul style="list-style-type: none"> • Creating a new document • Typing text • Saving the text • Opening and saving file on Microsoft Word/Libre Office Writer. 	02
2. Identify icons on the toolbar	1. Status bar 2. Menu bar 3. Icons on the Menu bar 4. Multiple ways to perform a function	1. Group activity on using basic user interface of LibreOffice writer 2. Group activity on working with Microsoft Word	02
3. Save, close, open and print document	1. Save a word document 2. Close a word document 3. Open an existing document 4. Print	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. Change style and size of text 2. Align text 3. Cut, Copy, Paste 4. Find and replace	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. Use of spell checker 2. Autocorrect	1. Group activity on checking spellings and grammar using LibreOffice Writer 2. Group activity on checking spellings and grammar using	02

		Microsoft Word	
6. Insert lists, tables, pictures, and shapes in a word document	1. Insert bullet list 2. Number list 3. Tables 4. Pictures 5. 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. Insert header 2. Insert footer 3. Insert page number 4. Page count	1. Practical exercise of inserting header, footer and page numbers in LibreOffice Writer 2. Practical exercise of inserting header, footer and page numbers in Microsoft Word	03
8. Make changes by using the track change option in a word document	1. Tracking option 2. Manage option 3. Compare documents	1. Group activity on performing track changes in LibreOffice Writer 2. Group activity on performing track changes in Microsoft Word	04
Total			20

UNIT 4: ENTREPRENEURIAL SKILLS – III			
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	1. Role-play on different kinds of businesses around us	03
2. Describe the significance of entrepreneurial values	1. Meaning of value 2. Values of an Entrepreneur 3. Case study on qualities of an entrepreneur	1. Role-play on qualities of an entrepreneur	03
3. Demonstrate the attitudinal changes required to become an entrepreneur	1. Difference between the attitude of entrepreneur and employee	1. Interviewing employees and entrepreneurs	03

4. Develop thinking skills like an entrepreneur	1. Problems of entrepreneurs 2. Problem-solving 3. Ways to think like an entrepreneur	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. Brainstorming on generating a business ideas	04
6. Describe customer needs and the importance of conducting a customer survey	1. Understanding customer needs 2. Conducting a customer survey	1. Group activity to conduct a customer survey	04
7. Create a business plan	1. Importance of business 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			
Learning Outcome	Theory (07 hrs)	Practical (08 hrs)	Duration (15 hrs)
1. Describe the importance of the main sector of the green economy	1. Meaning of ecosystem, food chain and sustainable development 2. Main sectors of the green economy- E-waste management, green transportation, renewal energy, green construction, and water management	1. Group discussion on sectors of green economy 2. Poster making on various sectors for promoting green economy	06
2. Describe the main recommendations of 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	03

		a short note on the important initiatives for promoting green economy.	
3. Describe the major green sectors/ areas and 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. Identify the role of government and private agencies in the green economy	1. Role of the government in promoting a green economy 2. Role of private agencies in promoting green economy	1. Group discussion on the role of Government and Private Agencies in promoting a green economy. 2. Poster making on green sectors.	03
Total			15

Part B: Vocational Skills

S. No.	Units	Duration (165 Hrs)
1.	Unit 1: Handicraft and Handloom Industry in India	25
2.	Unit 2: Bamboo and its Processing	35
3.	Unit 3: Tools, Techniques and Development of Bamboo Products	35
4.	Unit 4: Green Products, Market and Consumerism	30
5.	Unit 5: Work Area, Tools and Machines	20
6.	Unit 6: Health, Hazards and Safety Measures at Workplace	20
Total		165

UNIT 1: HANDICRAFT AND HANDLOOM INDUSTRY IN INDIA			
Learning Outcome	Theory (10Hrs)	Practical (15 Hrs)	Duration (25 Hrs)
1. Explain handicraft, handloom and bamboo industry	1. Introduction to handicraft and handloom industry 2. Bamboo handicraft around the world 3. Scenario of bamboo handicraft in India 4. Bamboo handicraft clusters in India	1. Identify and locate bamboo clusters in the map of India. 2. Watching, observing documentary and report preparation of bamboo handicraft. 3. Market survey of bamboo products.	7

2. Analyze and describe scope of bamboo industry	<ol style="list-style-type: none"> 1. Unique features and future prospects of the bamboo industry 2. Challenges and limitations faced by the bamboo industry 3. Career opportunities in bamboo Industry 	<ol style="list-style-type: none"> 1. Prepare a report on scope of bamboo industry in India 2. Make a power point presentation on scope and importance of bamboo industry 	8
3. Explain roles and responsibilities of “Bamboo Work Artisan”	<ol style="list-style-type: none"> 1. Attributes of “Bamboo Work Artisan” 2. Role and responsibilities of “Bamboo Work Artisan” 3. Terminologies related to bamboo handicraft 	<ol style="list-style-type: none"> 1. Visit a bamboo industry/cluster, observe roles and responsibilities of “Bamboo work Artisan” and document the same. 	10
Total			25

UNIT 2: BAMBOO AND ITS PROCESSING			
Learning Outcome	Theory (10 Hrs)	Practical (25Hrs)	Duration (30Hrs)
1. Identification, Cultivation and post-harvest management of bamboo	<ol style="list-style-type: none"> 1. Identification of Bamboo Species 2. Cultivation and harvesting of bamboo 3. Post-harvest quality check and storage of bamboo 	<ol style="list-style-type: none"> 1. Identify the availability of different species in different locations of India on a map. 2. Visit a bamboo plantation site nearby and understand the particulars of bamboo harvesting, regrowth, quality check and storage. Make a report on the same. 	8
2. Explain general characteristics of bamboo	<ol style="list-style-type: none"> 1. Anatomy of bamboo 2. Physical properties of bamboo 3. Mechanical properties of bamboo 	<ol style="list-style-type: none"> 1. Identify different anatomical parts of a bamboo plant and define its characteristics through drawings. 2. Make a report on the physical and mechanical properties of bamboo and compare it with other materials like wood, steel and plastic 	7
3. Apply various treatment techniques on bamboo	<ol style="list-style-type: none"> 1. Importance of bamboo treatment 2. Treatment methods: 	<ol style="list-style-type: none"> 1. Conduct treatment techniques with bamboo with the information provided 2. Take before and after pictures, videos and make a 	10

	Natural and chemical	power point presentation of treatment processes conducted.	
4. Describe different forms of bamboo used for different purposes	1. Different forms of bamboo: <ul style="list-style-type: none"> • Solid bamboo • Splits of bamboo • Slivers of bamboo • Fibers of bamboo • Bamboo yarns/ fabric • Bamboo charcoal • Bamboo Wood 	1. Make different forms of bamboo using tools and ideate small products out of the various forms: lamps, planters, flutes, cycles, abacus, blocks, bracelet, speakers, jewellery, candle holders. 2. Display them as an exhibition with names of the forms, the product made and other examples of such products.	10
Total			35

UNIT 3: TOOLS, TECHNIQUES AND DEVELOPMENT OF BAMBOO PRODUCTS			
Learning Outcome	Theory (10 Hrs)	Practical (25 Hrs)	Duration (40Hrs)
1. Identify tools and equipment used in bamboo handicraft industry and describe their usage	1. Tools Used for making bamboo products 2. Equipment Used for making bamboo products	1. Demonstrate to clean, sharpen, and maintain their tools 2. Workshop focused on safety practices in bamboo handicraft industry 3. Make a chart on different tools with pictures	4
2. Demonstrate Sliver making, dyeing and weaving of bamboo slivers	1. Methods to prepare bamboo slivers 2. Dyeing of Bamboo Slivers <ul style="list-style-type: none"> • Turmeric Powder • Tea Powder • Katha from Cutch Tree • Harda or Chebulic myrobalan • Flame of the forest 	1. Prepare a dyeing station in the lab and source materials required for the process. 2. Conduct dyeing of bamboo slivers by different materials and demonstrate the difference in colours. 3. Develop multiple weaves using multiple techniques and incorporate them in a product of your choice (coasters, runners, lamps, placemats, gift box, file folder, planters). 4. Display the products as an exhibition.	8

	<ul style="list-style-type: none"> • or Palas flower • Manjistha or Indian Madder • Indigo • Alta <p>3. Weaving Techniques</p> <ul style="list-style-type: none"> • Weaving of bamboo slivers • Loom weaving of bamboo slivers 		
3. Applique, Bending & Quilling of Bamboo Slivers	<p>1. Applique work</p> <ul style="list-style-type: none"> • Method for Bamboo Applique Work <p>2. Bending of Bamboo Splits</p> <ul style="list-style-type: none"> • Method for Bending Bamboo <p>3. Quilling of Bamboo Slivers</p> <ul style="list-style-type: none"> • Method for Quilling with Bamboo 	<p>1. Develop a product using multiple techniques of applique work (animals, birds, bangle, wall hangings, photo frames, handbag, clutches, cardholders, decorative items).</p> <p>2. Display the products as an exhibition.</p> <p>3. Experiment bending techniques using heat guns. Determine maximum bending possibility of bamboo and develop products (tongs, hangers, cloth clips, basket rings, paper baskets).</p> <p>4. Display the products as an exhibition.</p> <p>5. Experiment sliver making for quilling and form different shapes through quilling of bamboo to make products (earring, brooches, hair pins, bow ties, wall decor).</p> <p>6. Display the products as an exhibition.</p>	10
4. Finishing of Bamboo Products	<p>1. Joinery of Bamboo for Products</p> <ul style="list-style-type: none"> • End to end joinery • Middle to end joinery at 90 degrees • Middle to middle Interlocking joinery at 90 degrees • Pole and stick joinery 	<p>1. Develop samples of multiple joinery techniques and incorporate them into a product (shelves, stands, racks, stools, hanging decor, organisers, boxes).</p> <p>2. Display the products as an exhibition.</p> <p>3. Execute finishing techniques by using various tools on bamboo forms.</p> <p>4. Take before and after pictures, videos and make a power point presentation of the finishing techniques.</p>	06

	at 90 degrees <ul style="list-style-type: none"> • Laminated bamboo is similar to wood and thus similar joineries • Solid bamboo joinery 2. Finishing Process of Bamboo Products		
5. Design and Develop Bamboo Products	1. Creating and designing bamboo products for different uses <ul style="list-style-type: none"> • Home Décor • Kitchenware • Jewellery • Utility Product • Other products 	1. Create a mood board showing various types of bamboo products in the mentioned categories. 2. Design and develop a creative product using different techniques. 3. Display your product as part of an exhibition.	07
Total			35

UNIT 4: GREEN PRODUCTS, MARKET AND CONSUMERISM			
Learning Outcome	Theory (10Hrs)	Practical (20Hrs)	Duration (30Hrs)
1. Explain emerging trends in bamboo handicraft.	1. Contemporary Styles 2. Online marketplace 3. Digital Design Tools 4. Advanced Machinery	1. Research current trends in bamboo handicraft, such as modern design aesthetics, technological innovations, or new applications of bamboo 2. Demonstrate 3D designing software for designing of bamboo products	10

2. Identify and analyze the different aspects related to market of bamboo crafts and products. Role of national and international government organisations and initiatives in promoting the bamboo handicraft industry.	<ol style="list-style-type: none"> Market and Consumerism <ul style="list-style-type: none"> Market trends Market economy Identifying Consumer Green consumerism Role of National and International Organisations and Initiatives in Promoting the Bamboo Handicraft Industry Initiatives and policies to support bamboo handicraft industry - Domestic and International 	<ol style="list-style-type: none"> Identify market places for bamboo products and make a power point presentation Create personas of consumers for green consumerism. Visit websites of organisations involved in bamboo and make a consolidated report of their work. Visit Government websites to understand the initiatives and policies towards bamboo handicraft and make a report. 	10
3. Identify and explain the key SDGs and their targets, analyze and apply green design principles in sustainable practices of eco-friendly bamboo products.	<ol style="list-style-type: none"> Introduction to Sustainable Development Goals-2030 and their targets Green design Eco-friendly aspects of bamboo 	<ol style="list-style-type: none"> Design flow charts to determine supply chain of the bamboo product making process while following principles of sustainability. Debate or discussion on fair trade practices and ethical considerations in bamboo handicraft. 	10
Total			30

UNIT 5: WORK AREA, TOOLS AND MACHINES			
Learning Outcome	Theory (7Hrs)	Practical (13Hrs)	Duration (25Hrs)
1. Explain Maintenance of Tools & Work Area Safety	<ol style="list-style-type: none"> Work area management Handling material and tools Maintenance of tools Methods of cleaning the tools 	<ol style="list-style-type: none"> Collect the data and make a report on safety measures 	10

2. Describe safe storage of material and waste management	1. Bamboo storing techniques 2. Waste management	1. Visit a bamboo industry and prepare a PowerPoint presentation on the ways of storage of different material 2. Demonstrate to store the material safely and correctly	5
3. Analyze use of tools and material according to work flow standards	1. Use of correct tools and material 2. Introduction to running maintenance	1. Carryout running maintenance of different tools	5
Total			20

UNIT 6: HEALTH, HAZARDS AND SAFETY MEASURES AT WORKPLACE			
Learning Outcome	Theory (7 Hrs)	Practical (13 Hrs)	Duration (20 Hrs)
1. List and analyze potential hazards & safety measures at workplace.	1. Types of potential hazards 2. Keeping work area free from hazards	1. Collect the data and make a report on risk and hazards of industry	06
2. Describe health, safety, and security at workplace	1. Complying with health and safety instructions 2. Complying with gender and PwD related instructions 3. Monitoring potential risk at the workplace 4. Safety Guidelines	1. Demonstrate how to handle materials and tools 2. Prepare a report of maintenance	07
3. Explain environmental management procedures, security details, potential accidents and emergencies	1. Environmental management system 2. Emergency Response and Training 3. Potential accidents and response to those scenarios	1. Visit an industry and study layout of the factory 2. Prepare a report of emergency situation	07
Total			20

GRADE 12

Part A: Employability Skills

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

UNIT 1: COMMUNICATION SKILLS – IV			
Learning Outcome	Theory (10 hrs)	Practical (15 hrs)	Duration (25 hrs)
1. Demonstrate active listening skills	1. Active listening - listening skill, stages of active listening 2. Overcoming barriers to active listening	1. Group discussion on factors affecting active listening 2. Poster making on 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, 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 skills to practice the following: <ul style="list-style-type: none"> Simple sentence Complex sentence Types of objects 2. Identify the types of sentences <ul style="list-style-type: none"> Active and Passive sentences Statement/ Declarative sentence 	1. Group activity on writing sentences and paragraphs 2. Group activity on practicing writing sentences in active or passive voice 3. Group activity on writing different types of sentences (i.e., declarative, exclamatory, interrogative and imperative)	05

	<ul style="list-style-type: none"> • Question/ • Interrogative sentence - Emotion/ Reaction or Exclamatory sentence - Order or Imperative sentence 3. Paragraph writing		
Total			25

UNIT 2: SELF-MANAGEMENT SKILLS – IV			
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 it positive	10
2. Describe how to become result oriented	1. How to become 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 disorders- <ul style="list-style-type: none"> • Suspicious • Emotional and impulsive • Anxious 4. Steps to overcome Personality disorders	1. Group discussion on self-awareness 2. Group discussion on common personality disorders 3. Brainstorming steps to overcome personality disorder	10
Total			25

UNIT 3: INFORMATION AND COMMUNICATION TECHNOLOGY SKILLS – IV			
Learning Outcome	Theory (06 hrs)	Practical (14 hrs)	Duration (20 hrs)
1. Identify the components of a spreadsheet application	1. Getting started with spreadsheet - types of a spreadsheet, steps to start LibreOffice Calc., 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 a 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 2. Need to format cell and content 3. Changing text style and font size 4. Align text in a cell 5. Highlight text	1. Group activity on formatting a spreadsheet in LibreOffice Calc 2. Group activity on performing basic calculations in LibreOffice Calc.	02
4. Demonstrate the knowledge of using advanced features in spreadsheet	1. Sorting data 2. Filtering data 3. Protecting spreadsheet with password	1. Group activity on sorting data in LibreOffice Calc	03
5. Make use of the software used for making slide presentations	1. Presentation software available 2. Steps to start LibreOffice Impress 3. Adding text to a	1. Group practice on working with LibreOffice Impress tools	02

	presentation		
6. Demonstrate the knowledge to open, close and save slide presentations	1. Open, Close, Save and Print a slide presentation	1. Group activity on saving, closing and opening a presentation in LibreOffice Impress	01
7. Demonstrate the operations related to slides and texts in the presentation	1. Working with slides and text in a presentation- adding slides to a presentation, deleting slides, adding and formatting text, highlighting text, aligning text, changing text colour	1. Group activity on working with font styles in LibreOffice Impress	04
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			
Learning Outcome	Theory (10 hrs)	Practical (15 hrs)	Duration (25 hrs)
1. Describe the concept of entrepreneurship and the types and roles and functions entrepreneur	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. 3. Chart preparation on types of entrepreneurs 4. Brainstorming activity on What motivates an entrepreneur	10
2. Identify the barriers to	1. Barriers to entrepreneurship	1. Group discussion about "What we fear	05

entrepreneurship	2. Environmental barriers 3. No or faulty business plan 4. Personal barriers	about entrepreneurship” 2. Activity on taking an interview of an entrepreneur.	
3. Identify the attitude that make an entrepreneur successful	1. Entrepreneurial attitude	1. Group activity on identifying entrepreneurial attitude.	05
4. Demonstrate the knowledge of entrepreneurial attitude and competencies	1. Entrepreneurial competencies 2. Decisiveness 3. Initiative 4. Interpersonal skills- positive attitude, stress management 5. Perseverance 6. Organisational skills- time management, goal setting, efficiency, managing quality.	1. Playing games, such as “Who am I”. 2. Brainstorming a business ideas 3. Group practice on “Best out of Waste” 4. Group discussion on the topic of “Let’s grow together” 5. Group activity on listing stress and methods to deal with it like Yoga, deep breathing exercises, etc. 6. Group activity on time management	05
Total			25

UNIT 5: GREEN SKILLS-IV			
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: <ul style="list-style-type: none"> • Agriculture • Transportation • Water conservation • Solar and wind energy • Eco-tourism • Building and construction • Solid waste management • Appropriate technology 	1. Group discussion on the importance of green job. 2. Chart preparation on green jobs in different sectors.	08

2. State the importance of green jobs	1. Importance of green jobs in <ul style="list-style-type: none"> Limiting greenhouse gas emissions Minimising waste and pollution Protecting and restoring ecosystems Adapting to the effects of climate change 	1. Preparing posters on green jobs. 2. Group activity on tree plantation. 3. Brainstorming different ways of minimising waste and pollution	07
Total			15

Part B–Vocational Skills

S. No.	Units	Duration (Hrs)
1.	Unit 1: Elements and Principles of Design	25
2.	Unit 2: Bamboo Product Diversification and Current Trends	25
3.	Unit 3: Measurements & Drawings for Bamboo Furniture	35
4.	Unit 4: Sustainability Practices in Bamboo Handicraft	35
5.	Unit 5: Effective Team Work at Workplace	25
6.	Unit 6: Complying with Workplace Requirements	20
Total		165

UNIT 1: ELEMENTS AND PRINCIPLES OF DESIGN			
Learning Outcome	Theory (10Hrs)	Practical (15 Hrs)	Duration (25Hrs)
1. Explain and apply elements of design in creating bamboo products	1. Elements of design <ul style="list-style-type: none"> Color Line Shape Form Space Texture Value 	1. Make a file and explain each element in reference to bamboo with pictures 2. Make a colour wheel and explain different colour schemes. Paste pictures of different handicraft showing colour schemes	12
2. Analyze and apply the principles of design in creating bamboo products	1. Principles of design <ul style="list-style-type: none"> Proportion Balance Rhythm Harmony Emphasis Variety Movement 	1. Create 5 bamboo product designs of each type of design principles and make a portfolio	13
Total			25

UNIT 2: BAMBOO PRODUCT DIVERSIFICATION AND CURRENT TRENDS			
Learning Outcome	Theory (10Hrs)	Practical (15Hrs)	Duration (25Hrs)
1. Describe and evaluate the role of modern bamboo designs across various sectors	1. Introduction to modern bamboo designs in the world <ul style="list-style-type: none"> • Home decors • Kitchenware • Furniture • Jewellery • Toys • Accessories 	1. Make a repository of pictures of new modern designs worldwide in each category with their prices in INR	8
2. Explain the requisites for bamboo entrepreneurial success and implement them while making bamboo products.	1. Requisites for Bamboo Entrepreneurial Success in India <ul style="list-style-type: none"> • Trend mapping • Artisan empowerment • Online presence • Customer segmentation • Quality control • Material integration • Personalization • Presentation and packaging 	1. Determine a bamboo product which could perform well in the market. 2. Analyse the product's market in terms of the requisites for entrepreneurial success. Make a report of the same.	10
3. Design and Develop Bamboo Products	1. Design and development of bamboo products in diverse categories <ul style="list-style-type: none"> • Home Décor • Kitchenware • Jewellery • Utility Product • Other products 	1. Create a chart showing various types of bamboo products in the mentioned categories. 2. Design and develop a creative product using different techniques. 3. Display your product as part of an exhibition	7
Total			25

UNIT 3: MEASUREMENTS & DRAWINGS FOR BAMBOO FURNITURE			
Learning Outcome	Theory (10 Hrs)	Practical (25 Hrs)	Duration (35 Hrs)
1. Explain the significance of accurate measurements in developing bamboo handicrafts	1. Measurements for developing following products: <ul style="list-style-type: none"> • Table • Chair • Loungers • Bench • Shelf • Almirah • Organizers 	1. Collect bamboo furniture from the market and measure their dimensions using measuring tape and document the same.	10
2. Describe the application of drawings and applying the drawing for developing following bamboo products	1. Drawings for developing following bamboo products: <ul style="list-style-type: none"> • Drawing Techniques • Technical drawing • Visualization through mock-up 	1. Make technical drawing of a bamboo furniture or product of your choice on paper 2. Develop a scaled down model of the same product using materials similar to bamboo	10
3. Executes measurements and drawing techniques for creating innovative and novel products of bamboo.	1. Steps to be followed to develop bamboo furniture <ul style="list-style-type: none"> • Integrating techniques and drawing to create bamboo products • Execution of drawing to develop bamboo products 	1. Develop a new product which does not exist in the market and demonstrate the usage and techniques used to develop the product. 2. Through technical drawings, execute the manufacture of the designed bamboo product.	15
Total			35

UNIT 4: SUSTAINABILITY PRACTICES IN BAMBOO HANDICRAFT			
Learning Outcome	Theory (10 Hrs)	Practical (20Hrs)	Duration (35Hrs)
1. Explain contribution of bamboo handicrafts in achieving SDGs.	1. SDGs through bamboo handicraft <ul style="list-style-type: none"> • Poverty eradication • Gender equality and women empowerment • Sustainable economic growth • Sustainable consumption and production pattern • Sustainable management of resources 	1. Group Discussion on SDG's and how they can be met by bamboo handicrafts. 2. Create a power point presentation on possibilities to meet SDG's through bamboo handicraft	10
2. Apply eco-design principles by ensuring high reliability and durability, limiting production waste, implementing clean production techniques, and using clean and reusable packaging.	1. Eco-design principles <ul style="list-style-type: none"> • High reliability and durability • Limiting production waste • Clean production techniques • Clean and reusable packaging 	1. Develop supply chain details of the bamboo product developed in Unit 3 and define eco-design principles for the same	15
3. Implement recycling and upcycling strategies for utilizing bamboo waste	1. Recycling of bamboo <ul style="list-style-type: none"> • Recycling of bamboo waste • Cradle to cradle 	1. Determine recycling and upcycling techniques of the developed bamboo product for after life.	10
Total			35

UNIT 5: EFFECTIVE TEAMWORK AT WORK PLACE			
Learning Outcome	Theory (10Hrs)	Practical (15 Hrs)	Duration (25Hrs)
1. Describe value of accountability, adaptability, commitment and trust in the workplace	1. Importance of accountability, adaptability, commitment and trust at work places 2. Understanding own roles, duties and accountability 3. Performing roles effectively at workplace	1. Prepare a chart on role and duties of bamboo Product Artisan.	15

	4. Adapting to the changing work situation		
2. Describe creative freedom and its use in increasing process efficiency	1. Creative freedom and its importance 2. Improving the existing techniques to increase process efficiency	1. Practice constructing/ assembling bamboo product components Suggest creative alternates for making product with minimum waste	10
Total			25

UNIT 6: COMPLYING WITH WORKPLACE REQUIREMENTS			
Learning Outcome	Theory (10 Hrs)	Practical (10 Hrs)	Duration (20 Hrs)
1. Understanding and adhering to organisational standards, Government regulations and greening solutions	1. Self-learning and personal improvement 2. Understanding organisational standards and Government Regulations	1. Assessing the environmental impact of current workplace practices and recommend eco-friendly alternatives.	05
2. Effective teamwork and communication Skills at Workplace	1. Team-work and coordination with team members 2. Behavioral aspects of successful teamwork, language proficiency and communication skills at Workplace	1. Team-building workshops that focus on improving team dynamics and coordination. 2. Exercises to improve employees' communication skills in the workplace, focusing on writing, speaking, and comprehension	10
3. Applying and promoting workplace requirements	1. Developing Personal Development Goals and Management tools and practices 2. Evaluating one's own performance and achieving excellence 3. Motivating others to full-fill the workplace requirements	1. Preparation of checklist and schedules for production of a bamboo product 2. Preparation of a self-evaluation template to assess the performance at workplace.	05
Total			20

6. ORGANISATION OF FIELD VISITS

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

Visit Craft mela, Exhibitions, Market, Workshops, relevant clusters, industries and small units to observe the following: Location, Site, Office building, Store, Packing area, Handicraft production area, Cutting area and Industrial machines. During the visit, students should obtain the following information from the owner or the supervisor of the industry:

1. Area under industry and its layout
2. Departments in industry
3. Work culture and environment of various departments
4. Various tools and equipment of bamboo handicraft
5. Different buyers, the company deals with
6. Product range of the industry
7. Understand time and action calendar
8. Manufacture, export, import, sale procedure
9. Manpower engaged
10. Total expenditure of industry/unit/workspace
11. Total annual income
12. Profit/Loss (Annual)
13. Any other information

7. LIST OF EQUIPMENT AND MATERIALS

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

A. Training Material inside Lab

1. Charts of handling equipment's
2. Charts of different process related to bamboo products
3. Samples of bamboo products
4. Equipment used for developing bamboo products
5. Samples of bamboo and sliver
6. Chart of bamboo processing

B. Equipment to be seen during Field Visit

1. Organisational Chart of the bamboo industry/workshop
2. **Machete/Chopper:** Used for cutting bamboo culms (stalks) during harvesting.
3. **Crosscut Saw:** For cutting bamboo into desired lengths.
4. **Bamboo Hand Splitter:** A hand tool with multiple blades to split bamboo culms into strips.
5. **Bamboo Knife:** For splitting bamboo by hand and for finer cutting tasks.
6. **Hand Plane:** To smoothen and shape the bamboo surface.
7. **Draw Knife:** Used for shaving and shaping bamboo strips.
8. **Bamboo Shaving Machine:** A machine that shaves the outer layer of bamboo to achieve a uniform thickness.
9. **Bamboo Splitting Machine:** A bamboo splitting machine is used to cut whole bamboo into uniform splits.
10. **Bamboo Planer Machine:** Used to produce uniform rectangular bamboo splits.
11. **Bamboo Sliver Making Machine:** For making thin slivers from bamboo strips, typically used in weaving.
12. **Bamboo Mat Weaving Loom:** A loom designed specifically for weaving bamboo mats.
13. **Bamboo Bending Machine:** For bending bamboo poles into desired shapes (often used in furniture making).
14. **Heat Gun/Torch:** Used to bend bamboo with heat.
15. **Sanding Machine:** To smooth the surface of bamboo products.
16. **Hand Drill:** For making holes or precise cuts in bamboo.
17. **Jig Saw:** For cutting intricate shapes and patterns.
18. **Lacquering/Polishing Tools:** Brushes and spray guns for applying finishes.
19. **Glue Gun/Adhesive Tools:** For assembling bamboo parts.
20. **Nail Gun:** For fixing bamboo components together.
21. **CNC Machine:** For precision cutting, engraving, and shaping of bamboo products.
22. **Bamboo Strip Sizing Machine:** Ensures uniform size and thickness of bamboo strips, particularly useful in large-scale production.
23. **Bamboo Veneer Slicing Machine:** Used to produce thin bamboo veneers for use in laminates or decorative surfaces.
24. **Gloves and Goggles:** Essential for protecting hands and eyes during cutting, splitting, and machining.
25. **Dust Mask/Respirator:** Protects from bamboo dust, which can be harmful when inhaled.
26. **Ear Protection:** Necessary when using loud machinery.
27. **Apron:** Protects clothes from bamboo dust.
28. **Spokeshave:** For detailed shaping and smoothening.
29. **Wooden Mallet:** Used in combination with chisels for precise work.
30. Any other automatic and semi-automatic equipment used on site.
31. Safety and security equipment's on site
 - Fire extinguisher
 - Security cameras
 - LCD screens
 - Safety sign boards
 - Personal protective equipment's (PPE) like gloves, helmets, jackets, harness etc.
 - Locking systems

32. Housekeeping equipment's on site

- Vacuum cleaner
- Mops
- Cleaning chemicals
- Cleaning Robots
- Air purifiers
- Filtering machines
- Spill Absorbents

33. Waste disposal equipment's such as scrap bins, recyclers, waste processing machines etc.

34. Any other equipment mentioned in the student's manual can be sighted during the field visit.

C. Teaching/Training Aids

1. Computer
2. LCD Projector
3. Projection Screen
4. White/Black Boards
5. Flip Charts

S. No.	Item	Quantity for a batch of 40 Students	Tentative Rate (Rs.)	Tentative price (Rs.)
1.	Machete/Chopper	10	80	800
2.	Crosscut Saw	4	10,000	40,000
3.	Bamboo Splitter	5	6000	30,000
4.	Bamboo Knife	20	250	5,000
5.	Hand Plane	10	750	7,500
6.	Draw Knife	10	7000	70,000
7.	Bamboo Shaving Machine	5	2500	12,500
8.	Bamboo Sliver Making Machine	1	70,000	70,000
9.	Heat Gun/Torch	5	1,000	5,000
10.	Sanding Machine	5	4000	20,000
11.	Hand Drill	10	600	6,000
12.	Jig Saw	5	3,000	15,000
13.	Lacquering/Polishing Tools	5	500	2,500
14.	Glue Gun/Adhesive Tools	20	500	10,000
15.	Nail Gun	10	1,000	10,000
16.	CNC Machine	1	15,000	15,000
17.	Bamboo Gloves	40	1000	40,000

18.	Goggles	40	200	8,000
19.	Dust Mask/Respirator	40	20	800
20.	Ear Protection	40	50	2,000
21.	Spokeshave	10	500	5,000
22.	Wooden Mallet	20	200	4,000
23.	Measuring Tape	20	10	200
24.	Apron	40	300	12,000
TOTAL				3,91,300

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.	<ul style="list-style-type: none"> Post-graduation in Design/Fine Arts or allied area from a recognized Institute/University, with at least 1 year work experience in relevant area. <p style="text-align: center;">or</p> <ul style="list-style-type: none"> Bachelor of Design / Diploma in Design/Arts and Craft or allied area from a recognized Institute/University with a minimum of 3 years work experience in relevant area. 	<ul style="list-style-type: none"> Effective communication skills (oral and written) Basic computing skills 	<ul style="list-style-type: none"> As per the norms applicable. 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 organisations 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/she 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 the 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 grade XI or grade 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.

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