

# **LEARNING OUTCOME BASED VOCATIONAL CURRICULUM**

**JOB ROLE: Sewing Machine Operator**

(QUALIFICATION PACK: Ref. Id. AMH/Q0301)

**SECTOR: Apparel, Made-Ups and Home Furnishing**

**Classes 9 and 10**

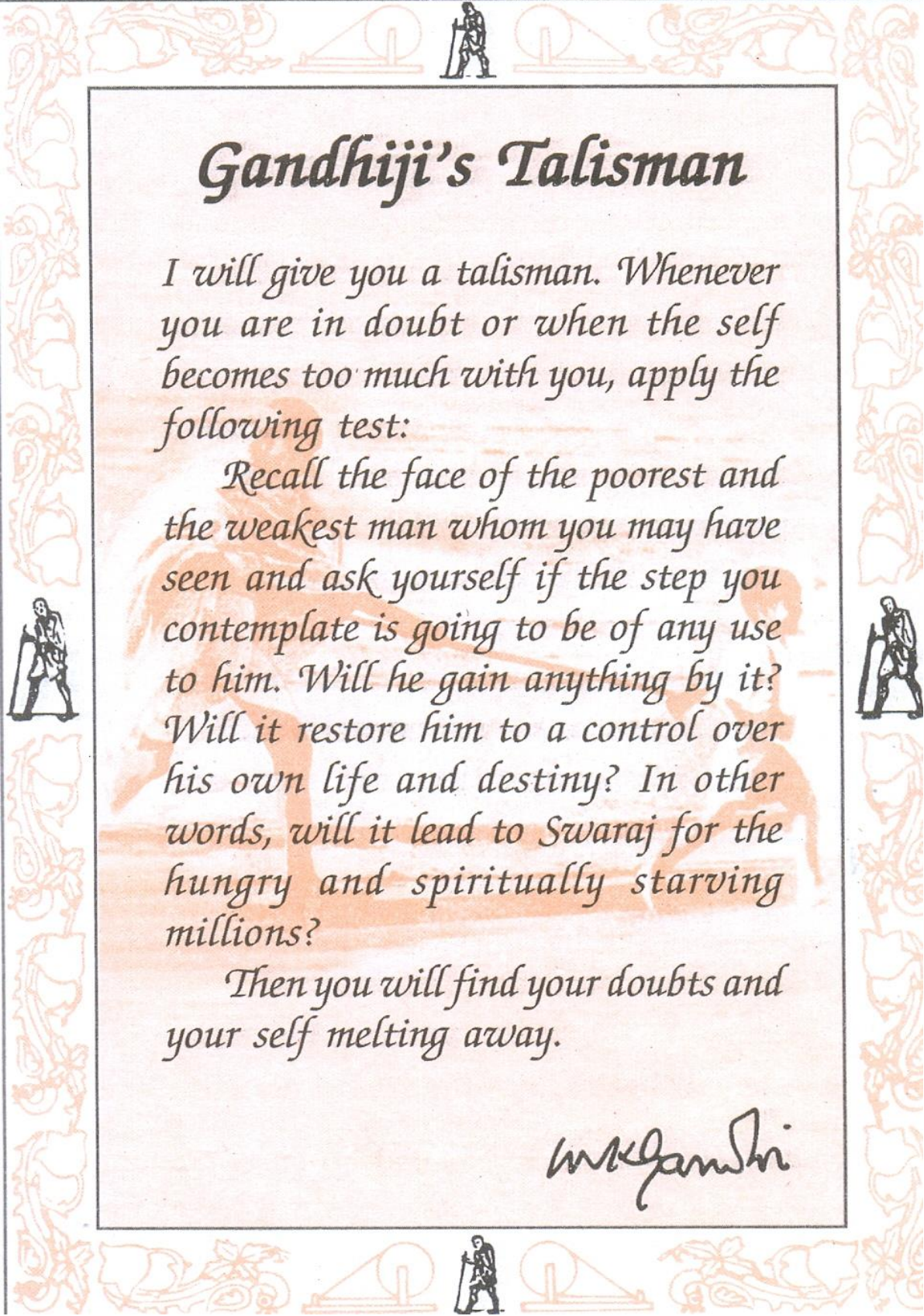


**PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION**

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

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

**<http://www.psscive.ac.in>**



## Gandhiji's Talisman

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

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

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

*M. Gandhi*

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CURRICULUM**

**Apparel, Made-Ups and Home Furnishing -  
Sewing Machine Operator**

**June, 2017**

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**<http://www.psscive.ac.in>**

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# FOREWORD

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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 vocational curriculum 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 vocational curriculum is to bring about the improvement in 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 vocational curriculum as part of the vocational training packages for the job role of **Sewing Machine Operator**. The curriculum has been developed for the 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

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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 PSSCIVE Central Institute of Vocational Education (PSSCIVE) was entrusted the responsibility to develop learning outcome based vocational curriculum, 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 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 fulfil the needs of the society and the world of work. In order to honour its commitment to the nation, the PSSCIVE has initiated the work on developing learning outcome based vocational curriculum 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, valuable time and positively responding to our request for development of curriculum. We are grateful to MHRD and NCERT for the financial support and cooperation in realising the objective of providing learning outcome based vocational curriculum and courseware to the States and other stakeholders under the PAB (Project Approval Board) approved project of *Rashtriya Madhyamik Shiksha Abhiyan (RMSA)* of MHRD.

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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 21<sup>st</sup> Century.

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

# ACKNOWLEDGEMENTS

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

We are grateful to the Director, NCERT for his support and guidance. We also acknowledge the contributions of our colleagues at the Technical Support Group of RMSA, MHRD, RMSA Cell at the National Council of Educational Research and Training (NCERT), National Skill Development Agency (NSDA) and National Skill Development Corporation (NSDC) and **Apparel, Made-ups and Home Furnishing Sector Skill Council (AMHSSC)** for their academic support and cooperation.

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

We are also grateful to Dr. Pinki Khanna, Course Coordinator, Dr. Anil Kumar, Professor, Department of Vocational Education and Entrepreneurship Development, National Institute of Technical Teachers Training and Research (NITTTR), Bhopal and Dr. Nishi Sharma, Consultant on contractual basis for their contributions.

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

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**PSSCIVE Team**



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# 1. COURSE OVERVIEW

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## **COURSE TITLE: Apparel, Made-Ups and Home Furnishing - Sewing Machine Operator**

Sewing Machine Operations involves stitching of components of garments together using a sewing machine. The role of a sewing machine operator is very critical to the industry as it enhances the quality of the product.

A Sewing Machine Operator, also called a 'Stitcher or Machinist' is an important job-role associated with Apparel sector. The primary responsibility of a machinist is to stitch or sew fabric, fur, or synthetic materials, join the parts of a garment together, reinforce seams, and attach buttons, hooks, zippers, and accessories to produce apparel and home furnishing.

Most sewing functions are specialized and require the operator to receive specific training. Although operators specialize in one function, the trend toward cross-training requires them to broaden their skills. *Team assemblers* perform all of the assembly tasks assigned to their team, rotating through the different tasks, rather than specializing in a single task. Sewing machine operators must have good hand-eye coordination, as well as an understanding of textile fabrics. Operators usually begin by performing simple tasks, working their way up to more difficult assemblies and fabrics as they gain experience.

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

- Apply effective oral and written communication skills to interact with people and customers.
- Identify the principal components of a computer system.
- Demonstrate the basic skills of using computer.
- Demonstrate self-management skills.
- Demonstrate the ability to provide a self-analysis in context of entrepreneurial skills and abilities.
- Demonstrate the knowledge of the importance of green skills in meeting the challenges of sustainable development and environment protection.
- Identify and describe sewing machine and its attachments.
- Demonstrate sewing machine operations.
- Demonstrate sewing machine attachments and their operations.
- Operation of Single Needle Lock Stitch (SNLS) machine.
- Identify the different types of needles, threads, marking, measuring, cutting tools and sewing aids.
- Construct different types of seams and edge finishes using sewing machine.
- Construct different garment components using sewing machine.
- Identify the different types of fasteners and their uses.
- Identify simple faults of sewing machine and their remedies.
- Apply appropriate needle, thread and stitch per inch (SPI) for various fabrics.
- Describe the importance and practice 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.

- Report the damage or faults in material and assembly to the responsible person.
- Explain the job card/work ticket terminologies and its applications.

**COURSE REQUIREMENTS:** The learner should have the basic knowledge of Textile and Clothing.

**COURSE LEVEL:** This is a beginner level course. On completion of this course, a student can take up an Intermediate level course in the area of Apparel, Made-ups and Home Furnishing in Class XI and Class XII.

<b>COURSE DURATION:</b>	<b>400 Hrs</b>
Class 9	: 200 Hrs
Class 10	: 200 Hrs
<b>Total</b>	<b>: 400 Hrs</b>

## 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 9 is as follows:

<b>CLASS 9</b>			
	<b>Units</b>	<b>No. of Hours for Theory and Practical 200</b>	<b>Max. Marks for Theory and Practical 100</b>
<b>Part A</b>	<b>Employability Skills</b>		
	Unit 1: Communication Skills – I	20	10
	Unit 2: Self-management Skills – I	10	
	Unit 3: Information and Communication Technology Skills – I	20	
	Unit 4: Entrepreneurial Skills – I	15	
	Unit 5: Green Skills – I	10	
	<b>Total</b>	<b>75</b>	<b>10</b>
<b>Part B</b>	<b>Vocational Skills</b>		
	Unit 1: Introduction to Sewing Machine	15	30
	Unit 2: Sewing Machine, Tools and Equipment	25	
	Unit 3: Introduction to Seams	17	
	Unit 4: Care and Maintenance of Sewing Machine	20	

	Unit 5: Health and Safety Measures for Sewing Machine Operator	18	
	<b>Total</b>	<b>95</b>	<b>30</b>
<b>Part C</b>	<b>Practical Work</b>		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
	<b>Total</b>	<b>10</b>	<b>35</b>
<b>Part D</b>	<b>Project Work/Field Visit</b>		
	Practical File/Student Portfolio	10	10
	Viva Voce	05	05
	<b>Total</b>	<b>15</b>	<b>15</b>
<b>Part E</b>	<b>Continuous and Comprehensive Evaluation (CCE)</b>		
	<b>Total</b>	<b>05</b>	<b>10</b>
	<b>Grand Total</b>	<b>200</b>	<b>100</b>

The unit-wise distribution of hours and marks for Class 10 is as follows:

<b>CLASS 10</b>			
	<b>Units</b>	<b>No. of Hours for Theory and Practical 200</b>	<b>Max. Marks for Theory and Practical 100</b>
<b>Part A</b>	<b>Employability Skills</b>		
	Unit 1: Communication Skills – II	20	10
	Unit 2: Self-management Skills – II	10	
	Unit 3: Information and Communication Technology Skills – II	20	
	Unit 4: Entrepreneurial Skills – II	15	
	Unit 5: Green Skills – II	10	
	<b>Total</b>	<b>75</b>	
<b>Part B</b>	<b>Vocational Skills</b>		
	Unit 1: Application of Seams	15	30
	Unit 2: Stitching of Garment Components	26	
	Unit 3: Use of Fasteners in Garments	20	
	Unit 4: Product Quality In Stitching Operations	16	
	Unit 5: Job Card Instructions	18	
	<b>Total</b>	<b>95</b>	<b>30</b>
<b>Part C</b>	<b>Practical Work</b>		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
	<b>Total</b>	<b>10</b>	<b>35</b>
<b>Part D</b>	<b>Project Work/Field Visit</b>		

	Practical File/Student Portfolio	10	10
	Viva Voce	05	05
	<b>Total</b>	<b>15</b>	<b>15</b>
<b>Part E</b>	<b>Continuous and Comprehensive Evaluation (CCE)</b>		
	<b>Total</b>	<b>05</b>	<b>10</b>
	<b>Grand Total</b>	<b>200</b>	<b>100</b>

### 3. TEACHING/TRAINING ACTIVITIES

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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, 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**

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,	2	1	2	10

	information)				
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, provide 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 a decision or outcome, or to predict outcomes based on values)	0	1	0	02
	<b>Total</b>	<b>3x1=3</b>	<b>6x2=12</b>	<b>5x3=15</b>	<b>30 (14 questions)</b>

### 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 9

#### Part A: Employability Skills

S.No.	Units	Duration (Hrs)
1.	Communication Skills - I	20
2.	Self-management Skills - I	10
3.	Information and Communication Technology Skills-I	20
4.	Entrepreneurial Skills - I	15
5.	Green Skills - I	10
	<b>Total</b>	<b>75</b>

<b>Unit 1: Communication Skills - I</b>			
<b>Learning Outcome</b>	<b>Theory (08 Hrs)</b>	<b>Practical (12 Hrs)</b>	<b>Duration (20 Hrs)</b>
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 elements of communication cycle	1. Meaning of communication 2. Importance of communication skills 3. Elements of communication cycle– (i) sender, (ii) ideas, (iii) encoding, (iv) communication channel, (v) receiver, (vi) decoding, and (vii) feedback	1. Draw a diagram of communication cycle 2. Role plays on communication process related to the sector/job role	05
3. Identify the factors affecting our perspectives in communication	1. Perspectives in communication 2. Factors affecting perspectives in communication - Visual perception - Language - Past experience - Prejudices - Feelings - Environment	1. Group discussion on factors affecting perspectives in communication 2. Sharing of experiences on factors affecting perspectives 3. Sharing experiences on factors affecting communication at workplace	05
4. Demonstrate the knowledge of basic writing skills	1. Writing skills related to the following: • Phrases • Kinds of sentences • Parts of sentence • Parts of speech • Use of articles Construction of a paragraph	1. Demonstration and practice of writing sentences and paragraphs on topics related to the subject	05
<b>Total</b>			<b>20</b>

<b>Unit 2: Self-management Skills – I</b>			
<b>Learning Outcome</b>	<b>Theory (07 Hrs)</b>	<b>Practical (03 Hrs)</b>	<b>Duration (10 Hrs)</b>
1. Describe the meaning and importance of self-management	1. Meaning of self-management 2. Positive results of self-management 3. Self-management skills	1. Identification of self-management skills 2. Strength and weakness analysis	05
2. Identify the factors that helps in building self-confidence	1. Factors that help in building self-confidence – social, cultural, and physical factors 2. Self-confidence building tips – getting rid of the negative thoughts, thinking positively, staying happy with small things, staying clean, hygienic and smart, chatting with positive people, etc.	1. Role play exercises on building self-confidence 2. Use of positive metaphors/ words 3. Positive stroking on wakeup and before going bed 4. Helping others and working for community	05
<b>Total</b>			<b>10</b>

<b>Unit 3: Information and Communication Technology Skills – I</b>			
<b>Learning Outcome</b>	<b>Theory (06 Hrs)</b>	<b>Practical (14 Hrs)</b>	<b>Duration (20 Hrs)</b>
1. Describe the role of Information and Communication Technology (ICT) in day-to-day life and workplace	1. Introduction to ICT 2. Role and importance of ICT in personal life and at workplace 3. ICT in our daily life (examples) 4. ICT tools - Mobile, tab, radio, TV, email, etc.	1. Discussion on the role and importance of ICT in personal life and at workplace. 2. Preparing posters / collages for showing the role of ICT at workplace	04
2. Identify components of basic computer system and their functions	1. Computer system - Central Processing Unit (CPU), memory, motherboard, storage devices 2. Hardware and software of a computer system 3. Role and functions of Random Access Memory (RAM) and Read Only Memory (ROM) 4. Role and functions of Central Processing Unit 5. Procedure for starting	1. Connecting the cables and peripherals to the Central Processing Unit 2. Starting and shutting down a computer 3. Group discussion on the various aspects of hardware and software	07

<b>Unit 3: Information and Communication Technology Skills – I</b>			
<b>Learning Outcome</b>	<b>Theory (06 Hrs)</b>	<b>Practical (14 Hrs)</b>	<b>Duration (20 Hrs)</b>
	and shutting down a computer		
3. Demonstrate use of various components and peripherals of computer system	1. Peripherals devices and their uses – mouse, keyboard, scanner, webcam, etc. of a computer system	1. Identification of various parts and peripherals of a computer 2. Demonstration and practice on the use of mouse 3. Demonstration and practice on the use of keyboard 4. Demonstration of the uses of printers, webcams, scanner and other peripheral devices 5. Drawing diagram of computer system and labelling it	05
4. Demonstrate basic computer skills	1. Primary operations on a computer system – input, process, storage, output, communication networking, etc.	1. Identification of the various input and output units and explanation of their purposes	04
<b>Total</b>			<b>20</b>

<b>Unit 4: Entrepreneurial Skills - I</b>			
<b>Learning Outcome</b>	<b>Theory (06 Hrs)</b>	<b>Practical (09 Hrs)</b>	<b>Duration (15 Hrs)</b>
1. Identify various types of business activities	1. Types of businesses – service, manufacturing, hybrid 2. Types of businesses found in our community 3. Business activities around us	1. Prepare posters of business activities found in cities/villages, using pictures 2. Discuss the various types of activities, generally adopted by small businesses in a local community 3. Best out of waste 4. Costing of the product made out of waste 5. Selling of items made from waste materials 6. Prepare list of businesses that provides goods	09

<b>Unit 4: Entrepreneurial Skills - I</b>			
<b>Learning Outcome</b>	<b>Theory (06 Hrs)</b>	<b>Practical (09 Hrs)</b>	<b>Duration (15 Hrs)</b>
		and services in exchange for money	
2. Demonstrate the knowledge of distinguishing characteristics of entrepreneurship	1. Meaning of entrepreneurship development 2. Distinguishing characteristics of entrepreneurship 3. Role and rewards of entrepreneurship	1. Prepare charts showing advantages of entrepreneurship over wages 2. Group discussions on role and features of entrepreneurship 3. Lectures/presentations by entrepreneurs on their experiences and success stories 4. Identify core skills of successful entrepreneur	06
<b>Total</b>			<b>15</b>

<b>Unit 5: Green Skills - I</b>			
<b>Learning Outcome</b>	<b>Theory (07 Hrs)</b>	<b>Practical (03 Hrs)</b>	<b>Duration (10 Hrs)</b>
1. Demonstrated the knowledge of the factors influencing natural resource conservation	1. Introduction to environment, 2. Relationship between society and environment, ecosystem and factors causing imbalance 3. Natural resource conservation 4. Environment protection and conservation	1. Group discussion on hazards of deteriorating environment 2. Prepare posters showing environment conservation 3. Discussion on various factors that influence our environment	05
2. Describe the importance of green economy and green skills	1. Definition of green economy 2. Importance of green economy	1. Discussion on the benefits of green skills and importance of green economy 2. Prepare a Poster showing the importance of green economy with the help of newspaper/magazine cuttings	05
<b>Total</b>			<b>10</b>

## Part B: Vocational Skills

S.No.	Units	Duration (Hrs)
1.	Introduction to Sewing Machine	15
2.	Sewing Machines, Tools and Equipment	25
3.	Introduction to Seams	17
4.	Care and Maintenance of Sewing Machine	20
5.	Health and Safety Measures for Sewing Machine Operator	18
<b>Total</b>		<b>95</b>

<b>Unit 1: Introduction to Sewing Machine</b>			
Learning Outcome	Theory (05 Hrs)	Practical (10 Hrs)	Duration (15Hrs)
1. Identify different types of Sewing Machine	1. Classification of Industrial, Commercial and Domestic Sewing Machine	1. Market Survey of various Sewing machines and make a report	05
2. Express Sewing Terminology	1. Sewing Terminology:- Basting, Seams, Selvedge, Fabric Grain (Grain line), Bias, Hem, Notches etc.	1. Make a chart of Sewing terminology	04
3. Explain functions of various parts and attachments of sewing machine	1. Describe functions of various parts of sewing machine 2. Describe attachments for sewing machine	1. Draw various machine attachments 2. Physical overview of sewing machine	06
<b>Total</b>			<b>15</b>

<b>Unit 2: Sewing Machine, Tools and Equipment</b>			
Learning Outcome	Theory (10 Hrs)	Practical (15 Hrs)	Duration (25 Hrs)
1. Practice operation of Single, Needle Sewing Machine	1. Different operations of Single needle Sewing Machine	6. Sewing practice on SNLS (single needle lock stitch) machine	03
2. Identification of Special Purpose Machine- Multi Needle Sewing Machine	1. Different types of Special Purpose machines like:- (i) Embroidery (ii) Button hole (iii) Pico (iv) Interlock (v) Over-lock (vi) Buttonhole Sewing machine etc.	1. Identification the different types of Special purpose machine 2. Visit an Industry for Special Purpose and Multi needle Sewing machine and make a report	07

<b>Unit 2: Sewing Machine, Tools and Equipment</b>			
<b>Learning Outcome</b>	<b>Theory (10 Hrs)</b>	<b>Practical (15 Hrs)</b>	<b>Duration (25 Hrs)</b>
3. Threading of Single needle lock stitch sewing machine	1. Process of threading the Single needle lock stitch sewing machine	1. Threading Practices of Single needle lock stitch sewing machine	01
4. Use of different type of needles and threads for sewing machine or hand	1. Different types of sewing needle and threads 2. Suitability of threads and needles according to fabrics	1. Make a table for different types of machine and hand needles suitable for different type of fabrics	03
5. Identify different types of measuring and marking tools	1. Various measuring and marking tools, and their usage: L-curve, hip curve, French curve, pattern master, chalk, carbon paper, and tracing wheel etc.	1. Identify various measuring and marking tools 2. Draw diagrams of various measuring and marking tools	05
6. Identify different type of cutting tools	1. Various cutting tools and explain their usage: scissors, electric cutters, and notcher etc.	1. Identify various cutting tools 2. Draw diagrams of various cutting tools	05
7. Describe functions of sewing aids	1. Various types of sewing aids 2. Functions of various types of sewing aids	1. Identification of sewing aids	01
<b>Total</b>			<b>25</b>

<b>Unit 3: Introduction to Seams</b>			
<b>Learning Outcome</b>	<b>Theory (06 Hrs)</b>	<b>Practical (11 Hrs)</b>	<b>Duration (17 Hrs)</b>
1. Demonstrate various types of Seams	1. Different types of Seams like (i) Plain Seam (ii) Flat and Fell Seam (iii) Bound Seam (iv) Lapped Seam (v) Counter Seam etc.	1. Prepare sample of different type of seams and paste in practical file	08
2. Carry out different types of edge finishes	1. Various types of edge finishes 2. Functions of different edge finishes	1. Prepare a Swatch File of different edge finishes	07
3. Identify Sewing Problems and their Remedies	1. Sewing Problems like:- (i) Puckering (ii) Slipped/Missed	1. Observation of Sewing problems and their remedies	02

<b>Unit 3: Introduction to Seams</b>			
<b>Learning Outcome</b>	<b>Theory (06 Hrs)</b>	<b>Practical (11 Hrs)</b>	<b>Duration (17 Hrs)</b>
	Stitch (iii) Needle/Thread Breakage (iv) Thread Bunching (v) Bobbin/Looper Thread Breakage, etc. 2. Remedies of the Sewing Problem		
<b>Total</b>			<b>17</b>

<b>Unit 4: Care and Maintenance of Sewing Machine</b>			
<b>Learning Outcome</b>	<b>Theory (07 Hrs)</b>	<b>Practical (13 Hrs)</b>	<b>Duration (20 Hrs)</b>
1. Demonstrate proper handling of Sewing Machine	1. Safe handling procedure of Sewing Machine 2. Handle materials, machinery, equipment and tools safely and correctly	1. Use correct lifting and handling procedures	03
2. Demonstrate oiling of sewing machine	1. Proper oiling of sewing machine	1. Practice oiling of sewing machine	03
3. Select appropriate needles, threads and stitch per inch for various fabrics	1. Selection of right kind of needle and thread for various fabrics 2. Selection of suitable stitch density (SPI) for various fabrics	1. Select appropriate needle, threads and stitch per inch for various fabrics	05
4. Check the equipment prior to stitching	1. Checking of correct equipment (i) Correct tools (ii) Correct attachments (iii) Changing needle (iv) Changing threads (v) Changing awls (vi) Correct timing	1. Prior checking for correct equipment	04
5. Identify the defect in machine, tools or equipment and report to the responsible person	1. Description of defects 2. Steps of reporting to the relevant person	1. Rectify machine defects 2. Make a chart of different defects in machine/ tools/ equipment	05
<b>Total</b>			<b>20</b>



<b>Unit 5: Health and Safety Measures for Sewing Machine Operator</b>			
<b>Learning Outcome</b>	<b>Theory (06 Hrs)</b>	<b>Practical (12 Hrs)</b>	<b>Duration (18 Hrs)</b>
1. Demonstrate safety measures in industry	1. Importance of safety measures 2. Tools and equipment used for safety measures	1. Visit an industry and enlist the safety tools and equipment used while working with various machines 2. Make a report of the visit	07
2. Classify importance of health measures in industry	1. Importance of health measures 2. Tools and equipment used for health measures	1. Visit an industry and enlist the health tools and equipment used while working with various machines 2. Make a report of the visit	07
3. Analyze various risk and hazards in the industry	1. Risks and hazards in the industry 2. Risk assessment factors	1. Collect the data and make a report on risk and hazards of industry	04
<b>Total</b>			<b>18</b>

## CLASS 10

### Part A - Employability Skills

<b>S.No.</b>	<b>Units</b>	<b>Duration (Hrs)</b>
1.	Communication Skills – II	20
2.	Self-management Skills - II	10
3.	Information and Communication Technology Skills – II	20
4.	Entrepreneurial Skills – II	15
5.	Green Skills - II	10
	<b>Total</b>	<b>75</b>

<b>Unit 1: Communication Skills - II</b>			
<b>Learning Outcome</b>	<b>Theory (12 Hrs)</b>	<b>Practical (08 Hrs)</b>	<b>Duration (20 Hrs)</b>
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
3. Provide descriptive and specific feedback	1. Communication cycle and importance of feedback 2. Meaning and importance of feedback 3. Descriptive feedback - written comments or conversations 4. Specific and non-specific feedback	1. Constructing sentences for providing descriptive and specific feedback	03
3. Apply measures to overcome barriers in communication	1. Barriers to effective communication – types and factors 2. Measures to overcome barriers in effective communication	1. Enlisting barriers to effective communication 2. Applying measures to overcome barriers in communication	04
4. Apply principles of communication	1. Principles of effective communication 2. 7 Cs of effective communication	1. Constructing sentences that convey all facts required by the receiver 2. Expressing in a manner that shows respect to the receiver of the message 3. Exercises and games on applying 7Cs of effective communication	03
5. 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	05
<b>Total</b>			<b>20</b>

<b>Unit 2: Self-management Skills - II</b>			
<b>Learning Outcome</b>	<b>Theory (05 Hrs)</b>	<b>Practical (05 Hrs)</b>	<b>Duration (10 Hrs)</b>
1. Apply stress management techniques	<ol style="list-style-type: none"> <li>1. Meaning and importance of stress management</li> <li>2. Stress management techniques – physical exercise, yoga, meditation</li> <li>3. Enjoying, going to vacations and holidays with family and friends</li> <li>4. Taking nature walks</li> </ol>	<ol style="list-style-type: none"> <li>1. Exercises on stress management techniques – yoga, meditation, physical exercises</li> <li>2. Preparing a write-up on an essay on experiences during a holiday trip</li> </ol>	06
2. Demonstrate the ability to work independently	<ol style="list-style-type: none"> <li>1. Importance of the ability to work independently</li> <li>2. Describe the types of self-awareness</li> <li>3. Describe the meaning of self-motivation and self-regulation</li> </ol>	<ol style="list-style-type: none"> <li>1. Demonstration on working independently</li> <li>2. goals</li> <li>3. Planning of an activity</li> <li>4. Executing tasks in a specific period, with no help or directives</li> <li>5. Demonstration on the qualities required for working independently</li> </ol>	04
<b>Total</b>			<b>10</b>

<b>Unit 3: Information and Communication Technology Skills– II</b>			
<b>Learning Outcome</b>	<b>Theory (08 Hrs)</b>	<b>Practical (12 Hrs)</b>	<b>Duration (20 Hrs)</b>
1. Distinguish between different operating systems	<ol style="list-style-type: none"> <li>2. Classes of operating systems</li> <li>3. Menu, icons and task bar on the desktop</li> <li>4. File concept, file operations, file organization, directory structures, and file-system structures</li> <li>5. Creating and managing files and folders</li> </ol>	<ol style="list-style-type: none"> <li>2. Identification of task bar, icons, menu, etc.</li> <li>3. Demonstration and practicing of creating, renaming and deleting files and folders, saving files in folders and sub-folders, restoring files and folders from recycle bin</li> </ol>	17
2. Apply basic skills for care and maintenance of computer	<ol style="list-style-type: none"> <li>1. Importance and need of care and maintenance of computer - Cleaning computer</li> </ol>	<ol style="list-style-type: none"> <li>1. Demonstration of procedures to be followed for cleaning, care and maintenance of hardware and</li> </ol>	03

<b>Unit 3: Information and Communication Technology Skills– II</b>			
<b>Learning Outcome</b>	<b>Theory (08 Hrs)</b>	<b>Practical (12 Hrs)</b>	<b>Duration (20 Hrs)</b>
	components - Preparing maintenance schedule - Protecting computer against viruses - Scanning and cleaning viruses and removing SPAM files, temporary files and folders	software	
<b>Total</b>			<b>20</b>

<b>Unit 4: Entrepreneurial Skills - II</b>			
<b>Learning Outcome</b>	<b>Theory (06 Hrs)</b>	<b>Practical (09 Hrs)</b>	<b>Duration (15 Hrs)</b>
1. List the characteristics of successful entrepreneur	1. Entrepreneurship and society 2. Qualities and functions of an entrepreneur 3. Role and importance of an entrepreneur 4. Myth about entrepreneurship 5. Entrepreneurship as a career option	1. Writing a note on entrepreneurship as career option 2. Collecting success stories of first generation and local entrepreneurs 3. Listing the entrepreneurial qualities – analysis of strength and weaknesses 4. Group discussion of self-qualities that students feel are needed to become successful entrepreneur 5. Collect information and related data for a business 6. Make a plan in team for setting up a business	15
<b>Total</b>			<b>15</b>

<b>Unit 5: Green Skills - II</b>			
<b>Learning Outcome</b>	<b>Theory (07 Hrs)</b>	<b>Practical (03 Hrs)</b>	<b>Duration (10 Hrs)</b>
1. Demonstrate the knowledge of importance, problems and solutions related to sustainable development	1. Definition of sustainable development 2. Importance of sustainable development 3. Problems related to sustainable development	1. Identify the problem related to sustainable development in the community 2. Group discussion on the importance of respecting and conserving indigenous knowledge and cultural heritage 3. Discussion on the responsibilities and benefits of environmental citizenship, including the conservation and protection of environmental values 4. Preparing models on rain water harvesting, drip / sprinkler irrigation, vermin-compost, solar energy, solar cooker, etc.	10
<b>Total</b>			<b>10</b>

## Part B–Vocational Skills

<b>S.No.</b>	<b>Units</b>	<b>Duration (Hrs)</b>
1.	Unit 1: Application of Seams	15
2.	Unit 2: Stitching of Garment Component	26
3.	Unit 3: Use of Fasteners in Garments	20
4.	Unit 4: Product Quality in Stitching Operations	16
5.	Unit 5: Job Card Instructions	18
	<b>Total</b>	<b>95</b>

<b>Unit 1: Application of Seams</b>			
<b>Learning Outcome</b>	<b>Theory (05 Hrs)</b>	<b>Practical (10 Hrs)</b>	<b>Duration (15 Hrs)</b>
1. Apply various types of Seams	1. Different types of Seams like (i) Plain Seam (ii) Flat and Fell Seam (iii) Bound Seam (iv) Lapped Seam (v) Counter Seam etc.	1. Prepare a Swatch File of application of different Seams	08
2. Explain garment construction terminologies	1. Garment construction terminologies like: (i) Stitch length (ii) Seam allowance (iii) Stitch line (iv) Seam line (v) Ease (vi) Facing (vii) Binding (viii) Cross Grain (ix) Bias (x) Piping etc.	1. Make a glossary of garment construction terminology in practical file	07
<b>Total</b>			<b>15</b>

<b>Unit 2: Stitching of Garment Components</b>			
<b>Learning Outcome</b>	<b>Theory (11 Hrs)</b>	<b>Practical (15 Hrs)</b>	<b>Duration (26 Hrs)</b>
1. Identify different Component of garment	1. Different components of garment like:- (i) Neckline (ii) Collar (iii) Sleeves (iv) Pockets (v) Plackets (vi) Yokes (vii) Belts	1. Draw diagram of different components of garment like:- (i) Neckline (ii) Collar (iii) Sleeves (iv) Pockets (v) Plackets (vi) Yokes (vii) Belts	08
2. Stitch different Components of Garment	1. Stitching procedure of different components of garment: (i) Necklines (ii) Collars (iii) Sleeves (iv) Pockets (v) Plackets (vi) Yokes (vii) Belts	1. Prepare sample file of different components of garment : (i) Necklines (ii) Collars (iii) Sleeves (iv) Pockets (v) Plackets (vi) Yokes (vii) Belts	10

<b>Unit 2: Stitching of Garment Components</b>			
<b>Learning Outcome</b>	<b>Theory (11 Hrs)</b>	<b>Practical (15 Hrs)</b>	<b>Duration (26 Hrs)</b>
3. Assemble different garment parts to make the final product	1. Assembling sequence of the garment	1. Prepare a sample garment with assembled parts	03
4. Stitch different disposal techniques of fullness	1. Disposal of fullness in a garment like: (i) Darts (ii) Pleats (iii) Tucks (iv) Gathers etc.	1. Prepare a sample file for disposal of Fullness. (i) Darts (ii) Pleats (iii) Tucks (iv) Gathers etc.	05
<b>Total</b>			<b>26</b>

<b>Unit 3: Use of Fasteners in Garments</b>			
<b>Learning Outcome</b>	<b>Theory (05 Hrs)</b>	<b>Practical (15 Hrs)</b>	<b>Duration (20 Hrs)</b>
1. Identify different types of Fasteners	1. Different types of Fasteners used in Garments like: (i) Laces (ii) Ribbons (iii) Buttons (iv) Patches (v) Hooks and Clasps (vi) Zip (vii) Velcro (viii) Fringe (ix) Tapes etc.	1. Market Survey for different types of fasteners 2. Prepare a Proto Sample File for different Fasteners (i) Laces (ii) Ribbons (iii) Buttons (iv) Patches (v) Hooks and Clasps (vi) Zip (vii) Velcro (viii) Fringe (ix) Tapes etc.	10
2. Sew the fasteners	1. Sewing techniques of Fasteners 2. Uses of Fasteners	1. Prepare a Sample File of all the fasteners stitched on the fabric	10
<b>Total</b>			<b>20</b>

<b>Unit 4: Product Quality in Stitching Operations</b>			
<b>Learning Outcome</b>	<b>Theory (06 Hrs)</b>	<b>Practical (10 Hrs)</b>	<b>Duration (16Hrs)</b>
1. Identify different quality measurements	1. Standard Quality levels (i) Fault free fabric (ii) Good Stitching and Seam formation (iii) Machine	1. Prepare a sample file of defective fabric/ stitches/ seams	10

<b>Unit 4: Product Quality in Stitching Operations</b>			
<b>Learning Outcome</b>	<b>Theory (06 Hrs)</b>	<b>Practical (10 Hrs)</b>	<b>Duration (16Hrs)</b>
	Conditions (iv) Accessories Checking (v) Needle Size Checking (vi) Thread Checking (vii) Trims and Fasteners etc.		
2. Report any damage or Fault in material or Assembling	1. Details of damage or fault in the material or assembling 2. Reporting correctly as per company quality standards to the responsible person	1. Demonstrate form and other documentation of reporting	06
<b>Total</b>			<b>16</b>

<b>Unit 5: Job Card Instructions</b>			
<b>Learning Outcome</b>	<b>Theory (07 Hrs)</b>	<b>Practical (11 Hrs)</b>	<b>Duration (18 Hrs)</b>
1. Explain terminologies on the job card or work ticket	1. Details of terminologies on the job card or work ticket 2. Reading of specification on job card or work ticket	1. Read a sample job card and draw correct specification	08
2. Identify garment components and understanding the stitch specification	1. Garment components specification from garment construction detail sheet (i) Front panel (ii) Back panel (iii) Side panel (iv) Front/Back/Side pocket (v) Neckline (vi) Sleeves etc. 2. Understanding stitch specification	1. Prepare a sample garment using a sample job card	10
<b>Total</b>			<b>18</b>



## 6. ORGANISATION OF FIELD VISITS

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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 Boutiques, Market, Workshops, relevant industries and small units to observe the following: Location, Site, Office building, Store, Fabric yard, Packing area, Fabric store, 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 cutting, sewing, pattern making and layout machines
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
11. Total annual income
12. Profit/Loss (Annual)
13. Manpower engaged
14. Total expenditure
15. Total annual income
16. Profit/Loss (Annual)
17. Any other information.

## 7. LIST OF EQUIPMENT AND MATERIALS

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**T**he 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.

### **MEASURING TOOLS:**

1. Tape Measure
2. Sewing Gauge
3. Clear Ruler:
4. Skirt- Hem Marker
5. Retractable Tape Measure
6. Zipper Guide
7. Adhesive- Backed Rulers

**DRAFTING TOOLS:**

1. Wooden Table
2. Brown sheet
3. Dress Model
4. Ball pin
5. Pin Cushions.

**MARKING TOOLS:**

1. Colour Pencil (Red & Blue)
2. Marking chalk
3. Tracing Wheel

**CUTTING TOOLS:**

1. Scissors
2. Shears
3. Pinking shears
4. Seam Ripper
5. Thread Clipper

**STITCHING TOOLS:**

1. Fabric
2. Needles
3. Thread
4. Thimble
5. Needle threader
6. Bobbin
7. Loop turner
8. Tailor's Chalk
9. Sewing Machine
10. Sewing Box
11. Hip Curve
12. Yardstick/Meter-stick

**PRESSING TOOLS:**

1. Iron box
2. Ironing board
3. Press cloth
4. Sleeve board
5. Seam roll

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

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

S. No.	Qualification	Minimum Competencies	Age Limit
1.	Post-graduation in Textile and Clothing or Relevant area from a recognized Institute / University, with at least 1 year work/teaching experience in Textile and clothing	<ul style="list-style-type: none"> <li>• Effective communication skills (oral and written)</li> <li>• Basic computing skills</li> </ul>	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/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-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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विद्यया ऽ मृतमश्नुते



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