

DRAFT

LEARNING OUTCOME BASED VOCATIONAL CURRICULUM

JOB ROLE: CEREAL CROP GROWER

(QUALIFICATION PACK: Ref. Id. AGR/Q0105)

SECTOR: AGRICULTURE

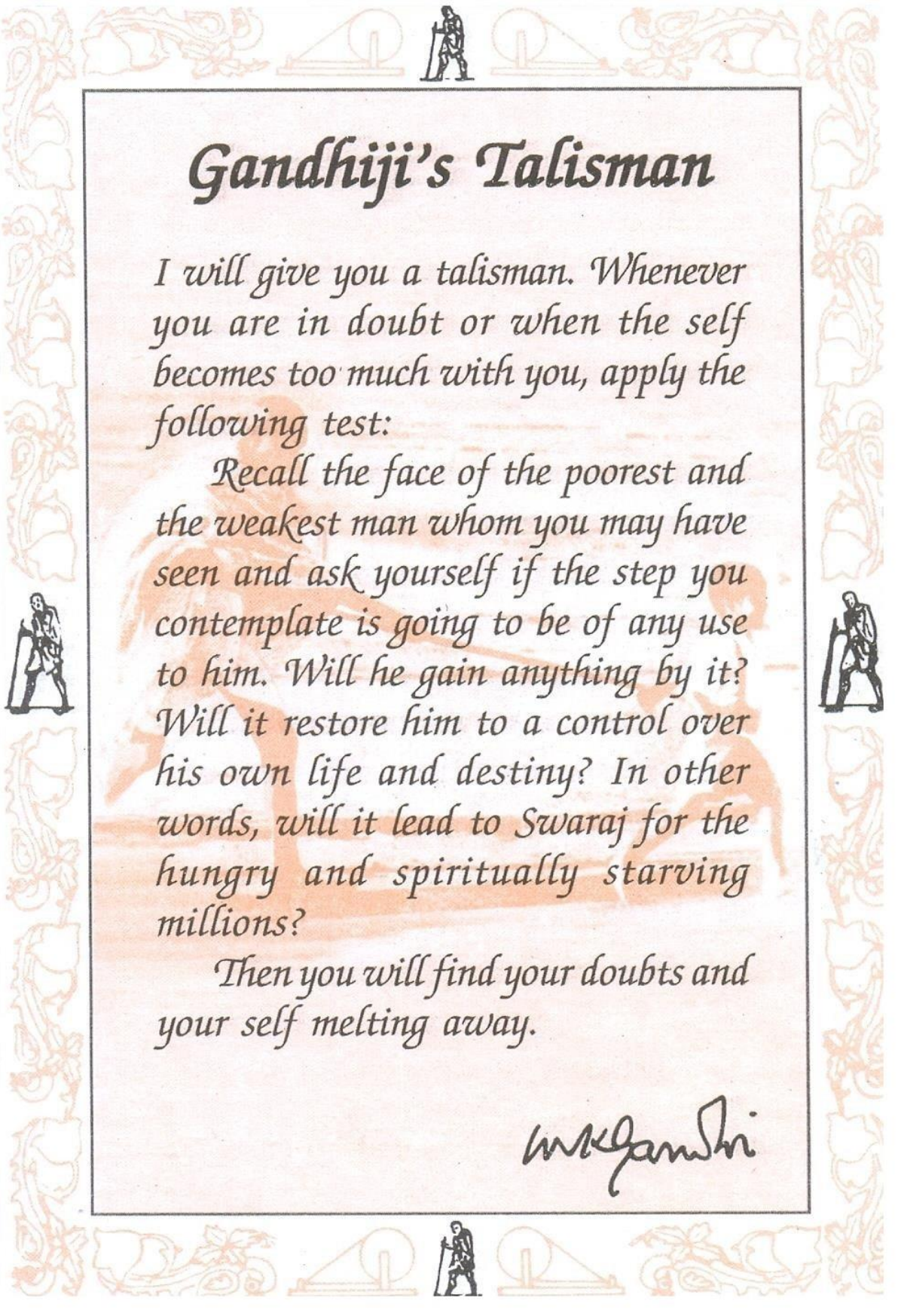
Grades 9 and 10



PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION

Shyamla Hills, Bhopal- 462 002, M.P., India

www.psscive.ac.in



Gandhiji's Talisman

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

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

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

M.K. Gandhi

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Cereal Crop Grower

October, 2023

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FOREWORD

The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE) a constituent of the National Council of Educational Research and Training (NCERT) is spearheading the efforts of developing learning outcome-based curricula and courseware aimed at integrating both vocational and general qualifications to open pathways of career progression for students. It is a part of Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education (CSSVSHSE) launched by the Ministry of Human Resource Development (now Ministry of Education), 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 *Samagra Shiksha*. The main purpose of the learning outcome-based curricula 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 curriculum as part of the vocational training packages for the job role of Cereal Crop Grower. 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.

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

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

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

Dr. 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 (MoE), Government of India for the financial support to the project for development of learning outcome-based curricula.

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

We are also grateful to Dr. Rajiv Pathak, Course Coordinator, Department of Agriculture and Animal Husbandry, PSSCIVE, Bhopal for the contributions and for the untiring efforts in contributions towards 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), Dr. Vipin Kumar Jain, Associate Professor and Dr. Dipak Shudhalwar, Professor, Department of Engineering and Technology, PSSCIVE in the development of the curriculum for employability skills are duly acknowledged.

The assistance provided by Dr. Ankita Sharma and Ms. Pooja Sharma, Assistant Professor (Contractual), Department of Agriculture and Animal Husbandry, PSSCIVE in drafting the document is duly acknowledged.

PSSCIVE Team

CONTENTS

S.No.	Title	Page No.
	Foreword	(i)
	Preface	(ii)
	Acknowledgement	(iv)
1.	Course Overview	1
2.	Scheme of Units	2
3.	Teaching/Training Activities	3
4.	Assessment and Certification	4
5.	Unit Content	
	CLASS 9	
	Part A Employability Skills	
	Unit 1: Communication Skills – I	7
	Unit 2: Self-management Skills – I	9
	Unit 3: Information and Communication Technology Skills – I	10
	Unit 4: Entrepreneurial Skills – I	12
	Unit 5: Green Skills – I	14
	Part B Vocational Skills	
	Unit 1: Introduction to Cereal Crops	15
	Unit 2: Field preparation for cereal crops cultivation	15
	Unit 3: Seed production of cereals	16
	Unit 4: Integrated Nutrient management in cereal crops	16
	Unit 5: Irrigation management in Cereal crops	17
	Unit 6: Maintain health and safety measures at work place	17
	CLASS 10	
	Part A Employability Skills	
	Unit 1: Communication Skills – II	18
	Unit 2: Self-management Skills – II	20
	Unit 3: Information and Communication Technology Skills – II	21
	Unit 4: Entrepreneurial Skills – II	22
	Unit 5: Green Skills – II	23
	Part B Vocational Skills	
	Unit 1: Integrated Weed management in cereal crops	24
	Unit 2: Integrated insect-pest and disease management in cereal crops	25
	Unit 3: Package and practices of cereal crops production	25
	Unit 4: Harvest and post-harvest management of cereal crops	26
	Unit 5: Basics of farm management and marketing	26
6.	Organisation of Field Visits	27
7.	List of Equipment and Materials	27
8.	Vocational Teacher's/ Trainer's Qualification and Guidelines	28
9.	List of Contributors	30

1. COURSE OVERVIEW

COURSE TITLE: Cereal Crop Grower

A Cereal Crop Grower cultivates varieties of cereal crops as per the package of practices recommended for a particular cereal crop and agro climate zone to achieve yields as per the genetic potential of a given variety. The individual at work undertakes the cultivation of cereals at the farm level. The individual is also responsible for harvesting the cereals. The cereal crop grower needs to adapt recommended practices for a particular agro-climate zone, type of soil, rainfall pattern and climatic conditions to achieve the best possible yield. The job requires the cereal crop grower to work industriously to produce high yield cereals with the application of the latest techniques of farming. In addition, the cereal crop grower needs to possess decision making skills that have to be used in the cereals cultivation process and also have ability to interface with all concerned stakeholders. The individual is also responsible for harvesting and marketing the produce.

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

- Apply effective oral and written communication skills to interact with people;
- Demonstrate the basic skills of using computer;
- Demonstrate self-management skills;
- Demonstrate the ability to provide a self-analysis of entrepreneurial skills and abilities;
- Provide preventive care to dairy animals as per guideline of veterinarian: Implement preventive care measures e.g. vaccination, deworming, bio-security, etc;
- Demonstrate the knowledge of the importance of green skills in meeting the challenges of sustainable development and environment protection;
- Select and prepare the site and sow the cereal seeds
- Carry out macro and micronutrient management of cereal crops
- Manage weed growth in cereal crop fields
- Perform integrated pest and disease management for cereal crop
- Perform irrigation management for field crops
- Carry out harvesting, post-harvest management and marketing of cereals
- Undertake basic entrepreneurial activities for small Enterprise
- Follow the relevant employability and entrepreneurial practices
- Engage in collective farming/activity
- Demonstrate health and safety at work place
- Carry out cultivation of Wheat, Rice, Maize and Millets

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

COURSE LEVEL: This is a beginner level course. On completion of this course, a student can take up a vocational course for a job role in Cereal Crop Grower in Class XI and Class XII.

COURSE DURATION: 400 hrs

Class 9:	200 hrs
Class 10:	200 hrs
Total:	400 hrs

2. SCHEME OF UNITS AND ASSESSMENT

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:

CLASS 9			
	Units	No. of Hours for Theory and Practical 200	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	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	
	Total	75	
Part B	Vocational Skills		
	Unit 1: Introduction to Cereal Crops	10	30
	Unit 2: Field preparation for cereal crops cultivation	20	
	Unit 3: Seed production of cereals	20	
	Unit 4: Integrated Nutrient management in cereal crops	20	
	Unit 5: Irrigation management in Cereal crops	10	
	Unit 6: Maintain health and safety measures at work place	15	
Total	95	30	
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
Part E	Continuous and Comprehensive Evaluation (CCE)		
	Total	05	10
	Grand Total	200	100

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

CLASS 10			
	Units	No. of Hours for Theory and Practical 200	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	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	
	Total	75	
Part B	Vocational Skills		
	Unit 1: Weed management in cereal crops	15	30
	Unit 2: Integrated disease and pest management in cereal crops	15	
	Unit 3: Package and practices of cereal crops production	28	
	Unit 4: Harvest and post-harvest management of cereal crops	17	
	Unit 5: Basics of farm management and marketing	20	
	Total	95	
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
Part E	Continuous and Comprehensive Evaluation (CCE)		
	Total	05	10
	Grand Total	200	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, 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

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. Question paper for the vocational subject may 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 recommended by the respective Sector Skill Council. The Central/State Examination Board will use the services of the relevant experts for setting up the question papers and conducting the examinations. The blue print for the question paper may be as follows:

Duration: 3 hrs

Maximum Marks: 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, information)	2	1	2	10
2.	Understanding – (Comprehension – to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	1	2	2	11
3.	Application – (Use abstract information in concrete situation, to apply knowledge to new situations: Use given content to interpret a situation, provide an example, or solve a problem)	0	1	1	05
4.	High Order Thinking Skills – (Analysis and Synthesis – Classify, compare, contrast, or differentiate between different pieces of information; Organize and/ or integrate unique pieces of information from a variety of sources)	0	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
	Total	3x1=3	6x2=12	5x3=15	30 (14 questions)

SKILL ASSESSMENT (PRACTICAL)

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

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

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.

Project Work (individual or group projects) are 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. After the field visit, each group might be asked to use the information to prepare presentations or reports, based on 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, and photographs of products prepared by students in relation to the unit of competency.

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 emphasise 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, please refer to the CCE manual of Central Board of Secondary Education (CBSE).

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.	Entrepreneurship Skills – I	15
5.	Green Skills – I	10
	Total	75

UNIT 1: COMMUNICATION SKILLS – I			
Learning Outcome	Theory (08 hrs)	Practical (12 hrs)	Duration (20 hrs)
1. Demonstrate the knowledge of importance, elements and perspectives in communication	1. Introduction to communication 2. Importance of communication 3. Elements of communication 4. Perspectives in communication 5. Effective communication	1. Role play on the communication process 2. Group discussion and sharing of experiences on factors affecting perspectives in communication 3. Asking students to write examples of 7Cs (i.e. Clear, Concise, Concrete, Correct, Coherent, Courteous and Complete) of effective communication 4. Preparing charts for elements of communication	02
2. Demonstrate the knowledge of verbal communication	1. Verbal communication 2. Types of verbal communication 3. Advantages and disadvantages of verbal communication 4. Public speaking	1. Role play of a phone conversation 2. Delivering speech and practicing public speaking by using 3P's	02

3. Demonstrate the knowledge of non-verbal communication	<ol style="list-style-type: none"> 1. Non-verbal communication 2. Importance of non-verbal communication 3. Types of non-verbal communication 4. Visual communication 	<ol style="list-style-type: none"> 1. Role play on non-verbal communication 2. Group discussion and demonstration of Do's and Don'ts to avoid body language mistakes 3. Group discussion on three methods of communication 	02
4. Demonstrate the knowledge of basic writing skills	<ol style="list-style-type: none"> 1. Writing skills: Parts of speech 2. Using capitals 3. Punctuation 4. Basic parts of speech 	<ol style="list-style-type: none"> 1. Reading paragraph and sentences and identifying parts of speech 2. Constructing and writing sentences by using parts of speech 3. Identifying nouns by guessing the name, place, animal, and thing 	02
5. Describe the parts and types of sentences	<ol style="list-style-type: none"> 1. Writing skills: Sentences 2. Parts of a sentence 3. Types of objects 4. Types of sentences – Active and Passive 5. Types of sentences, according to their purpose 6. Paragraphs 	<ol style="list-style-type: none"> 1. Making and writing sentences using direct and indirect objects 2. Writing a paragraph by using active and passive voice 3. Writing different types of sentences (i.e., declarative, exclamatory, interrogative and imperative) 	02
6. Demonstrate the knowledge of pronunciation basics	<ol style="list-style-type: none"> 1. Pronunciation Basics 2. Speaking correctly 3. Phonetics 4. Types of sounds 	<ol style="list-style-type: none"> 1. Pronouncing words and identifying vowels, diphthongs and consonants 2. Practicing the pronunciation of words 	02
7. Demonstrate how to greet and introduce self	<ol style="list-style-type: none"> 1. Greetings and Introductions 2. Greetings 3. Types of greetings 4. Introducing yourself and Others 	<ol style="list-style-type: none"> 1. Role-play on Formal and informal greetings 2. Role-play on introducing someone 3. Practicing and discussing on how to greet different people. 	02
8. Answer questions that others ask about you	<ol style="list-style-type: none"> 1. Talking about self 2. Talking about yourself 3. Filling a form 	<ol style="list-style-type: none"> 1. Practicing on introducing yourself and filling forms 2. Practicing on how to talk about yourself 	02

9. Asking questions according to a situation	1. Asking questions, I 2. Need for asking questions 3. Method for asking questions	1. Framing and writing questions (using Who, Where, When, What, Why and How) 2. Framing and writing questions (based on purpose of the question) 3. Discussing and guessing the personality using framed questions	02
10. Use the correct question words to ask open-ended and close-ended questions	1. Asking questions II 2. Types of questions 3. Framing questions	1. Framing and writing open-ended and close-ended questions. 2. Group practice on framing questions	02
Total			20

UNIT 2: SELF-MANAGEMENT SKILLS – I

Learning Outcome	Theory (07 hrs)	Practical (03 hrs)	Duration (10 hrs)
1. Describe the meaning and importance of self-management	1. Introduction to self-management 2. Self-awareness 3. Self-confidence 4. Self-motivation 5. Positive thinking 6. Self-control 7. Problem solving 8. Personal hygiene and grooming 9. Team work 10. Time management 11. Goal setting	1. Group discussion on self-management skills 2. Performing activities to know how much self-aware are you about yourself.	01
2. Identifying strength and weakness analysis	1. Strength and weakness analysis 2. Knowing yourself 3. Strength and Weakness analysis 4. Difference between interests and abilities	1. Group discussion on aim and goal in life 2. Group discussion on interests and abilities	01
3. Build self-confidence	1. Self-confidence 2. Qualities of self-confident people 3. Building self-confidence	1. Role play on building self-confidence 2. Performing activities on building confidence through positive words	02

4. Building the concept on positive thinking	<ol style="list-style-type: none"> 1. Positive thinking 2. Positive thinking and its importance 3. How to keep your thinking positive? 	<ol style="list-style-type: none"> 1. Storytelling 2. Role-play on following the class rules 3. Practicing to say positive words 4. Making a list of steps (self-reflection) on how you will follow positive attitude practices 5. Home activity on helping others, community service and social work 	02
5. Describe the concept and aspects of personal hygiene	<ol style="list-style-type: none"> 1. Personal hygiene 2. Three steps of personal hygiene <ul style="list-style-type: none"> • Care • Wash • Avoid 3. Essential steps of handwashing 	<ol style="list-style-type: none"> 1. Role-play on using personal hygiene steps 2. Discussion and follow up on personal hygiene practices 	02
6. Follow the guidelines for dressing and personal grooming	<ol style="list-style-type: none"> 1. Grooming 2. Grooming and its importance 3. Guidelines for dressing and grooming – clothes, hair, face 	<ol style="list-style-type: none"> 1. Role play on dressing and grooming standards 2. Self-reflection on dressing and grooming well 	02
Total			10

UNIT 3: INFORMATION AND COMMUNICATION TECHNOLOGY SKILLS – I

Learning Outcome	Theory (06 hrs)	Practical (14 hrs)	Duration (20 hrs)
1. Explain the role of Information and Communication Technology (ICT) in day-to-day life and the workplace	<ol style="list-style-type: none"> 1. Introduction to Information and Communication Technology (ICT) 2. ICT at workplace 3. ICT at home 	<ol style="list-style-type: none"> 1. Group discussion on past, present, and future use of ICT 2. Preparations of posters on applications of ICT 	02
2. Differentiate between the ICT tools and use of mobile apps	<ol style="list-style-type: none"> 1. ICT tools smartphones and tablets I 2. Smartphones 3. Tablets 4. TV and Radio 5. Application or apps 	<ol style="list-style-type: none"> 1. Performing activities to get familiar with mobile devices 	02

3. Differentiate between smartphones and tablets	<ol style="list-style-type: none"> 1. ICT tools -smartphone and tablets II 2. Mobile device layout 3. Basic features of a mobile device 4. Home screen of mobile device 5. Basic gestures used 	1. Performing activities to get familiar with the mobile device – use and applications	02
4. Describe the parts of computer and the computer peripherals	<ol style="list-style-type: none"> 1. Parts of a computer and peripherals 2. Parts of a computer 3. Input devices 4. Output devices 5. Peripherals devices and their functions 6. Central Processing Unit (CPU) 7. Understanding Random Access Memory (RAM) and Read Only Memory (ROM) 8. Motherboard 9. Ports and connections 	<ol style="list-style-type: none"> 1. Preparation of charts on components of computer 2. Group practice on connecting devices to a computer 	02
5. Demonstrate basic computer operations	<ol style="list-style-type: none"> 1. Basic computer operations 2. Computer hardware and software 3. Starting a computer 4. Log in and log out 5. Shutting down computer 6. Using the keyboard 7. Using a mouse 	<ol style="list-style-type: none"> 1. Group practice on use of computer 2. Group practice on using the keyboard 	02
6. Perform basic file computer operations	<ol style="list-style-type: none"> 1. Performing Basic file operations 2. Need to perform basic file operations. 3. Files and folders - creating a file and using text editor Ubuntu 	1. Group practice on creating a file.	02
7. Demonstrate the knowledge of internet and networking	<ol style="list-style-type: none"> 1. Communication and Networking -Basics of Internet 2. Use of the Internet 3. Connecting to the Internet 	1. Group discussion on the uses of the internet	02

	<ul style="list-style-type: none"> • Types of connection • Bandwidth • Internet browser 		
8. Perform internet browsing	<ol style="list-style-type: none"> 1. Communication and Networking – Internet Browsing 2. World Wide Web 3. Web page 4. Web browsers 	1. Group practice on web browsing	02
9. Apply the knowledge of communication networking	<ol style="list-style-type: none"> 1. Communication and Networking – Introductions to E-Mail 2. How does the E-mail work? 3. Email Id or address • Advantages of E-mail 	1. Group discussion on using E-mail and its advantages	01
10. Create an Email account	<ol style="list-style-type: none"> 1. Communication and Networking – Creating an E-mail account 2. Creating an E-mail account 3. Steps to open an E-mail account on Gmail 	1. Group practice on creating and operating an e-mail account	01
11. Write an Email	<ol style="list-style-type: none"> 1. Communication and Networking – Writing an E-mail 2. Writing an E-mail 3. Attaching a file to an E-mail 4. Managing folders 	1. Group practice on writing an e-mail	01
12. Reply an Email	<ol style="list-style-type: none"> 1. Communication and Networking – Receiving and Replying an E-mail 2. Receiving Email 3. Replying to an Email 4. Forwarding Email 5. Deleting Email 	1. Group practice on receiving and replying to an e-mail.	01
Total			20

UNIT 4: ENTREPRENEURSHIP SKILLS – I

Learning Outcome	Theory (06 hrs)	Practical (09 hrs)	Duration (15 hrs)
1. Describe the concept of Entrepreneurship skills	<ol style="list-style-type: none"> 1. What is Entrepreneurship? 2. Entrepreneurship 3. Enterprise 	1. Group activity on guessing the Entrepreneur	04

2. Describe the role of entrepreneurship	<ol style="list-style-type: none"> 1. Role of Entrepreneurship 2. Economic development 3. Social development 4. Improved standard of living 5. Optimal use of resources 6. More benefits at lower prices - products and services at competitive prices 	1. Group discussion on "A world without Entrepreneurs"	03
3. Describe the qualities of a successful entrepreneur	<ol style="list-style-type: none"> 1. Qualities of a successful entrepreneur 2. Patience 3. Positivity 4. Hardworking 5. Confidence 6. Open to trial and error 7. Creativity and innovation 	<ol style="list-style-type: none"> 1. Role-play on appearing for an interview 2. Group activities on interactions with entrepreneurs 	02
4. State the characteristics of entrepreneurship	<ol style="list-style-type: none"> 1. Distinguishing characteristics of entrepreneurship and wage employment 2. Characteristics of entrepreneurship 3. Wage employment 4. Benefits of entrepreneurship 	<ol style="list-style-type: none"> 1. Group activity on identifying characteristics of enterprise 2. Discussion on advantages of entrepreneurship over wage employment 	03
5. Identify the type of business activity	<ol style="list-style-type: none"> 1. Types of business activities 2. Product business 3. Service business 4. Hybrid business 	1. Group activity on identifying different types of products and services	01
6. Differentiate between the product, service, and hybrid businesses	<ol style="list-style-type: none"> 1. Product, Service, and Hybrid Businesses 2. Types of product-based business 3. Manufacturing businesses 4. Trade businesses 	1. Poster making on business activities around us	01
7. Describe the entrepreneurship	1. Entrepreneurship Development	1. Group activity on Make-and-Sell business	01

development process	Process 2. Steps of starting a business <ul style="list-style-type: none"> • Idea generation • Getting money and material • Understanding customer needs • Improving product/ service 		
Total			15

UNIT 5: GREEN SKILLS – I

Learning Outcome	Theory (07 hrs)	Practical (03 hrs)	Duration (10 hrs)
1. Demonstrate the knowledge of society and environment	1. Society and Environment 2. Natural resources 3. Renewable and Non-renewable resources 4. Types of pollutions 5. Climate change 6. Harmful radiation 7. Natural disaster 8. Saving the environment: What can you do? 9. Reduce, reuse and recycle 10. Actions for saving the environment	1. Group activity on listing the factors influencing the environment 2. Group activity on listing the steps one can take to save the environment	05
2. Describe the meaning and importance of conserving natural resources	1. Conserving natural resources 2. Soil conservation 3. Water conservation 4. Energy conservation 5. Food conservation 6. Forest conservation	1. Group discussion on various ways of conserving natural resources	02
3. Describe the meaning and scope of sustainable development and green economy	1. Sustainable Development and Green Economy 2. Sustainable Development 3. Sustainable Development 4. Goals (SDGs) 5. Green growth	1. Group discussion on importance of green skills 2. Poster making on importance of green economy	03

	6. Green economy 7. Components of green economy 8. Skill development for the green economy 9. Green skills 10. Green jobs 11. Green projects		
Total			10

Part B : Vocational Skills

S. No.	Units	Duration (Hrs)
1.	Introduction to Cereal Crops	10
2.	Field preparation for cereal crops cultivation	20
3.	Seed production of cereals	20
4.	Integrated Nutrient management in cereal crops	20
5.	Irrigation management in Cereal crops	10
6.	Maintain health and safety measures at work place	15
	Total	95

UNIT 1: Introduction to Cereal Crops

Learning Outcome	Theory (3 hrs)	Practical (7 hrs)	Duration (10 Hrs)
1.Importance and scope of Cereal Crop grower	1. Describe Importance and scope of Cereal Crop grower 2. Economic importance of Cereals	1. Prepare a pie chart/ bar diagram, depicting the production of cereals producing States in India	06
1. Classify Cereal crops	1. Classification of Cereal crops	1. Identification of Cereal crops in different seasons	04
Total			10

UNIT 2: Field preparation for cereal crops cultivation

Learning Outcome	Theory (07 hrs)	Practical (13 hrs)	Duration (20 Hrs)
1. Prepare field for Cereals cultivation	1. Describe field preparation for Cereal crops I. Ploughing II. Harrowing III. Levelling	1. Demonstration of field preparation	12

2. Explain the Soil and Climate requirement	1. Describe soil suitable for Cereals cultivation 2. Explain the climate requirement for Cereals cultivation	1. Collection and Identification of soil in nearby school vicinity	4
3. Identify the tools and implement used in field preparation of Cereal crops cultivation	1. Describe the types of tools and implements used in field preparation	1. Identification of various tools and implements for field preparation	4
Total			20

UNIT 3: SEED PRODUCTION OF CEREALS

Learning Outcome	Theory (8 hrs)	Practical (12 hrs)	Duration (20 Hrs)
1. Criteria for seed selection	1. Define seed 2. Types of seed 3. Criteria for seed selection	1. Identification of seed tag 2. Identification of different Cereals seed	08
2. Selection of suitable varieties	1. Define Variety 2. Importance of variety selection 3. Explain varieties of Cereal crops	1. Enlist the important varieties of Cereals	06
3. Demonstrate Seed production	1. Seed treatments with i. Fungicides ii. Biofertilizers 2. Explain the methods of seed sowing 3. Process of seed production	1. Demonstration of the procedure of Seed treatment 2. Demonstration of seed sowing of Cereals	06
Total			20

Unit 4: Integrated Nutrient Management in Cereal Crops

Learning Outcome	Theory (8 hrs)	Practical (12 hrs)	Duration (20 Hrs)
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1. Explain Plant nutrients	1. Describes plant nutrients 2. Classification of Plant nutrients I. Macro nutrients a. Primary nutrients b. Secondary nutrients II. Micro nutrients 3. Deficiency symptoms and its corrective measures	1. Identification of plant nutrients deficiency symptoms 2. Enlist the macro and micro nutrients	08
2. Demonstrate Soil sampling	1. Importance of soil testing 2. Procedure of Soil sampling 3. Interpretation of data	1. Demonstration of soil sampling procedure	06
3. Apply manures and fertilisers to cereal crops	1. Types of Manure and fertilisers 2. Applications of manures and fertilisers	1. Identification of manures and fertilisers	06
Total			20

Unit 5: Irrigation management in Cereal crops

Learning Outcome	Theory (4 hrs)	Practical (6 hrs)	Duration (10 Hrs)
1. Apply irrigation by using different methods	1. Define irrigation 2. Importance of irrigation 3. Irrigation requirement for Cereals 4. Methods and applications of irrigation	1. Visit nearby Cereal growing field and observe methods of irrigation	10
Total			10

Unit 6: Maintain Health and safety measures at work place

Learning Outcome	Theory (7hrs)	Practical (8 hrs)	Duration (15 Hrs)
1. Prevent Hazardous Conditions at Workplace	1. Describe the Hazard 2. Types of Hazard 3. Toxicity label of chemical 4. Explain the risk	1. Prepare a flow chart on types of hazards at a workplace	07
2. First Aid, Treatment and Safety Equipment	1. Write about First aid, Treatment and Safety equipment	1. Demonstration of safety devices and measures to be followed	08

	2. Chemical poisoning and first aid measures 3. Safety and protective devices 4. General health and safety measures 5. Amenities and environment 6. Emergency response 7. Manual tasks 8. Chemicals and hazardous substances 9. Electricity 10. Precautions to be taken in a farm		
Total			15

CLASS 10

Part A: Employability Skills

S.No.	Units	Duration (Hrs)
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
	Total	75

UNIT 1: COMMUNICATION SKILLS – II

Learning Outcome	Theory (12 hrs)	Practical (08 hrs)	Duration (20 hrs)
1. Demonstrate the knowledge of various methods of communication	1. Methods of communication 2. Communication process and elements 3. Methods of Communication	1. Role play on communication process 2. Group discussion on the effects of elements of communication cycle	05

2. Describe the types of verbal communication	<ol style="list-style-type: none"> 1. Verbal communication 2. Types of verbal communication 3. Advantages and disadvantages of Verbal communication 4. Mastering Verbal communication 	<ol style="list-style-type: none"> 1. Role plays of a telephonic conversation 2. Group practice on delivering speech and practicing public speaking 	02
3. Demonstrate the knowledge of non-verbal communication	<ol style="list-style-type: none"> 1. Non-verbal communication 2. Importance of Non-verbal communication 3. Types of non-verbal communication 4. Visual communication 	<ol style="list-style-type: none"> 1. Role plays on non-verbal communication 2. Group discussion and practice on how to avoid body language mistakes 3. Group discussion on three methods of communication 	02
4. Describe the communication cycle and importance of feedback	<ol style="list-style-type: none"> 1. Communication cycle and importance of feedback 2. Feedback 3. Types of feedback 4. Importance of feedback 	<ol style="list-style-type: none"> 1. Role play on providing feedback 2. Group practice on constructive feedback 	02
5. Identify the barriers to effective communication	<ol style="list-style-type: none"> 1. Barriers to Effective communication 2. Effective communication 3. Barriers to effective communication <ul style="list-style-type: none"> • Physical barriers • Linguistic barrier • Interpersonal barriers • Organizational barriers • Culture barriers 4. Ways to overcome barriers to effective communication 	<ol style="list-style-type: none"> 1. Role play on barriers to effective communication 2. Group practice on overcoming barriers to effective communication 	04
6. Demonstrate the knowledge of parts of speech	<ol style="list-style-type: none"> 1. Writing skills – Parts of speech 2. Capitalization 3. Punctuations 4. Basics of parts of speech 5. Supporting parts of speech <ul style="list-style-type: none"> • Article • Conjunctions • Prepositions • Interjections 	<ol style="list-style-type: none"> 1. Reading paragraph and sentences and identifying parts of speech 2. Group practice on sentence construction 3. Identifying nouns by guessing the name, place, animal, or thing 	03

7. Write sentences	<ol style="list-style-type: none"> 1. Writing Skills - Sentences 2. Parts of sentence 3. Types of objects 4. Types of sentences <ul style="list-style-type: none"> • Active • Passive 5. Paragraphs 	<ol style="list-style-type: none"> 1. Making sentences using direct and indirect objects 2. Writing a paragraph using active and passive voice 3. Writing different types of sentences (i.e., declarative, exclamatory, interrogative and imperative) 	02
Total			20

UNIT 2: SELF-MANAGEMENT SKILLS – II

Learning Outcome	Theory (05 hrs)	Practical (05 hrs)	Duration (10 hrs)
1. Apply stress management techniques	<ol style="list-style-type: none"> 1. Stress management 2. Stress and Stress management techniques 3. Management technique 4. Ability to work independently 5. Emotional intelligence 	<ol style="list-style-type: none"> 1. Role Play on avoiding stressful situation 2. Activity on listing the stressful situations and discussing the stress management techniques like yoga, deep breathing exercises etc. 	02
2. Identify strengths and weaknesses of self	<ol style="list-style-type: none"> 1. Self-Awareness – Strength and Weakness Analysis 2. Knowing yourself 3. Strength and weakness analysis 4. Techniques for identifying strengths and weaknesses 5. Difference between interests and abilities 	<ol style="list-style-type: none"> 1. Group discussion on aim and goal in life 2. Group discussion on interests and abilities 	02
3. Demonstrate the knowledge of self – motivation	<ol style="list-style-type: none"> 1. Self-Motivation 2. Types of motivation 3. Qualities of self-motivated people 4. Building self – motivation 	<ol style="list-style-type: none"> 1. Group discussion on staying motivated 2. Activity on listing the ways to motivate oneself 	02

4. Set SMART goals	<ol style="list-style-type: none"> 1. Self-Regulation – Goal Setting 2. Goals and Setting SMART goals 3. How to set goals <ul style="list-style-type: none"> • Specific • Measurable • Achievable • Realistic • Time bound 	<ol style="list-style-type: none"> 1. Group activity on setting SMART goals 2. Writing long- term and short -term goals 3. Activity on listing the ways to surely set SMART goals 	02
5. Demonstrate the knowledge of time management	<ol style="list-style-type: none"> 1. Self-Regulation – Time Management 2. Time management and its importance 3. Example and non-example of time management 4. Four steps for effective time management <ul style="list-style-type: none"> • Organise • Prioritise • Control • Track 5. Tips for practicing the four steps of effective time management 	<ol style="list-style-type: none"> 1. Preparing a list of activities to learn time management 2. Discussion on how to manage time to reach school on time 	02
Total			10

UNIT 3: INFORMATION AND COMMUNICATION TECHNOLOGY SKILLS – II

Learning Outcome	Theory (08 hrs)	Practical (12 hrs)	Duration (20 hrs)
1. Perform basic computer operations	<ol style="list-style-type: none"> 1. Basics computer operations 2. Computer hardware and software 3. Starting a computer 4. Shutting down a computer 5. Using keyboard 6. Using a mouse <ul style="list-style-type: none"> • Roll over or hover • Point and click • Drag and drop • Double click 	<ol style="list-style-type: none"> 1. Demonstration on use of computers 2. Group practice on using the keyboard 	12

2. Apply basic file operations	<ol style="list-style-type: none"> Performing basic file operations Basic File Operations Files and folders <ul style="list-style-type: none"> Creating a file Creating a folder 	1. Group practice on creating a folder	02
3. Demonstrate computer care and maintenance	<ol style="list-style-type: none"> Computer care and Maintenance Importance of care and maintenance of computers Basic tips for taking care of devices <ul style="list-style-type: none"> Cleaning computer devices Preparing maintenance schedule for computers Taking backup data Scanning and cleaning viruses Removing SPAM files 	1. Group activity on preparing a chart on care and maintenance of computer	03
4. Describe the importance of maintaining computer security and privacy	<ol style="list-style-type: none"> Computer security and privacy Computer security deals with protecting computer <ul style="list-style-type: none"> Reasons for security breach Threats to computer Protecting your data 	1. Group activity on preparing a chart of computer security and privacy	03
Total			20

UNIT 4: ENTREPRENEURIAL SKILLS – II

Learning Outcome	Theory (06 hrs)	Practical (09 hrs)	Duration (15 hrs)
1. Describe the meaning of entrepreneurship	<ol style="list-style-type: none"> Entrepreneurship and society Activities of entrepreneurs: <ul style="list-style-type: none"> Fulfil customer needs Use local materials Help society Create job Share wealth Lower price product 	1. Group work on finding the problems in school campus and turning it to business opportunities	05

2. Identify the qualities and functions of an entrepreneur	1. Qualities and functions of an entrepreneur 2. Qualities of entrepreneur	1. Activity on self-assessment of entrepreneurial qualities 2. Activity on solving a problem in their area 3. Taking an interview of an entrepreneur	03
3. Describe the myths and realities about entrepreneurship	1. Misconceptions and myths about entrepreneurship	1. Group activity on identifying everyday heroes 2. Activity on talking to entrepreneurs and taking their interview 3. Group activity on making items and selling to someone	04
4. Describe entrepreneurship as a career option	1. Entrepreneurship as a career option 2. Meaning of career <ul style="list-style-type: none"> • Ways of earning a living • Self-employment 3. Wage employment 4. Entrepreneur career process <ul style="list-style-type: none"> • Enter • Survive • Grow 	1. Talking about entrepreneurship as a life option 2. Group activity on presenting about the power of entrepreneurship	03
Total			15

UNIT 5: GREEN SKILLS – II

Learning Outcome	Theory (07 hrs)	Practical (03 hrs)	Duration (10 hrs)
1. Demonstrate the knowledge of green skills	1. Sustainable Development 2. Importance of sustainable development 3. Problems related to sustainable development 4. Sustainable development Goals 5. Sustainable development initiatives 6. Sustainable process	1. Group activity on creating garden in the school or planting tree saplings 2. Group discussion on "How to prevent wastage"	05
2. Describe the role of self in sustainable	1. Our role in sustainable development	1. Group discussion on	05

development	<p>2. Our role towards Sustainable Development</p> <ul style="list-style-type: none"> • Quality education • Clean water and sanitation • Affordable and clean energy • Decent work and economic growth • Reducing inequalities • Creating sustainable cities and communities • Responsible consumers and producers • Protect life below water • Protect life on land 	<p>conservation and protection of environment</p> <p>2. Group activity on organizing an art project using waste</p>	
Total			10

Part B: Vocational Skills

S. No.	Units	Duration (Hrs)
1.	Integrated Weed management in cereal crops	15
2.	Integrated disease and pest management in cereal crops	15
3.	Package and practices of cereal crops production	28
4.	Harvest and post-harvest management of cereal crops	17
5.	Basics of farm management and marketing	20
	Total	95

Unit 1: Integrated Weed Management in Cereal Crops

Learning Outcome	Theory (6 hrs)	Practical (9 hrs)	Duration (15 Hrs)
1. Identify common weeds of Cereal crops	<p>1. Describe weed</p> <p>2. Importance of weed management</p> <p>3. Classification of Weeds</p>	<p>1. Collection and Identification of weeds in Cereal crops and prepare herbarium</p>	07

2. Demonstrate integrated weed management in Cereal crops	1. Describe integrated weed management 2. Describe the methods of integrated weed management 3. Precautions to be taken during application of weedicides	1. Demonstration of cultural method of weed control 2. Demonstration of the application of weedicides	08
Total			15

Unit 2: Integrated Insect-Pest and Disease Management in Cereal Crops

Learning Outcome	Theory (7 hrs)	Practical (8 hrs)	Duration (15 hrs)
1. Identify major Insect-pests of Cereal crops and their control measures	1. Describe major insect-pests of Cereal crops 2. Insect-pests damage symptoms 3. Integrated insect-pests management	1. Identification of the damage caused by insect-pests 2. Demonstration of chemical control measures in Cereals	07
2. Identify diseases of Cereal crops and their control measures	1. Important diseases of Cereal crops 2. Symptoms of different Cereals diseases 3. Integrated disease management	1. Identification of the symptoms of different disease in Cereals 2. Demonstration of fungicide spray	08
Total			15

Unit 3: Package and Practices of Cereal Crops Production

Learning Outcome	Theory (10 hrs)	Practical (14 hrs)	Duration (28 hrs)
1. Cultivation technique of different Cereal crops	1. Package and practices of Cereal crops namely Wheat, Rice, Maize and Millets i. Climate ii. Soil iii. Varieties iv. Seed rate v. Sowing and sowing time vi. Application of manures and fertilisers vii. Irrigation viii. weed management ix. Crop management x. Harvest and post-harvest management	1. Identification of different Cereal crops 2. Identification of locally available millets seeds 3. Demonstration of cultivation practices of given cereal crops	28

Total		28
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Unit 4: Harvest and Post-harvest Management of Cereal Crops			
Learning Outcome	Theory (7 hrs)	Practical (10 hrs)	Duration (17 Hrs)
1. Demonstrate Harvesting and threshing	1. Describe methods of harvesting and threshing	1. Visit the farmer field and observe the harvesting and threshing	05
2. Explain Importance of Post-harvest management	1. Define post-harvest management 2. Describe post-harvest losses in Cereals 3. Management of post-harvest losses	1. Enlist the post-harvest losses	06
3. Demonstrate the methods of storage 4. Identify and control of storage pests	1. Methods of storage 2. Storage grain pests 3. Rodents 4. Bruchids 5. Control measures of storage pest	1. Identification of storage pest 2. Demonstration of the control of storage pest	06
Total			17

Unit 6: Basics of Farm Management and Marketing			
Learning Outcome	Theory (8 hrs)	Practical (12 hrs)	Duration (20 hrs)
1. Farm Management of Cereal grower	1. Describe farm management 2. Farm resources requirement 3. Crop Planning	2. Visit nearby farmer field and note down management practices	05
2. Cropping system and financial management	1. Cropping system I. Intercropping II. Crop rotation 2. Financial management I. Input and output requirement II. Cost benefit ratio 3. Farm Record Keeping	2. Demonstration of preparing farm record for administrative and financial management	05
3. Classify markets and marketing channels	1. Describe markets and its classification 2. Describe marketing channels	1. Visit nearby fruit market and observe different mechanism	05
Total			20

6. ORGANIZATION OF FIELD VISITS

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

Visit a Cereal Farm and observe the following: Location, Site, Office building, Store, Pot yard, Packing Yard, Seed bed, Water tank/Tube well. During the visit, students should obtain the following information from the owner or the supervisor of the Cereal Farm:

1. Area under Cultivation and its layout
2. Types of Cereals
3. Name of varieties grown
4. Total production of Cereal grown annually
5. Sale procedure
6. Manpower engaged
7. Total expenditure of growing Cereals
8. Total annual income
9. Profit/Loss (Annual)
10. Any other information

7. LIST OF EQUIPMENT AND MATERIALS

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

1. Auger
2. Disc Harrow (*on hiring basis*)
3. Farmyard Manure
4. Fertilisers
5. Digging Spade
6. Hoe
7. Knapsack Sprayer
8. Levelers
9. Long Handle Hoes
10. Plastics Baskets
11. Plough (*on hiring basis*)
12. Pump sets
13. Rigid Tillers
14. Rotary Tiller (*on hiring basis*)
15. Seed Treating Equipment
16. Seed-cum-Fertilizer Drill (*on hiring basis*)
17. Straw Reaper (*on hiring basis*)
18. Tractor (*on hiring basis*)
19. Trowels
20. Soil testing kit
21. Measuring cylinder, pesticides.
22. Pheromone traps
23. Power sprayer
24. Weighing machine

25. Moisture meter

The expensive tools can be taken on hiring basis.

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:

Qualification	Minimum Competencies	Age Limit
Post-graduation in Agriculture/ Agronomy from a recognized Institute/ University, with at least 1-year work experience.	<ul style="list-style-type: none"> • Effective communication skills (Oral and written) • Basic computing skills. 	18-37 years (as on Jan. 01 (year)) Age relaxation to be provided as per Govt. rules

Vocational Teachers/ Trainers form the backbone of Vocational Education being imparted as an integral part of *Samagra Shiksha*. 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 *Samagra Shiksha* in the following ways:

- (i) directly as per the prescribed qualifications and industry experience suggested by the PSS Central Institute of Vocational Education (PSSCIVE), NCERT or the respective Sector Skill Council (SSC)
OR
- (ii) through accredited Vocational Training Providers accredited under the National Quality Assurance Framework (NQAF*) approved by the National Skill Qualification Committee on 21.07.2016. If the State is engaging Vocational Teachers/Trainers through the Vocational Training Provider (VTP), it should ensure that VTP should have been accredited at NQAF Level 2 or higher.

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

The educational qualifications required for being a Vocational Teacher/Trainer for a particular job role are clearly mentioned in the curriculum for the particular NSQF compliant job role. The State should ensure that teachers / trainers deployed in the schools have relevant technical competencies for the NSQF qualification being delivered. The Vocational Teachers/Trainers

preferably should be certified by the concerned Sector Skill Council for the particular Qualification Pack/ Job role which he will be teaching. Copies of relevant certificates and/or record of experience of the teacher/trainer in the industry should be kept as record.

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

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

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

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

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

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

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

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

1. Participation in guidance and counselling activities conducted at Institutional, District and State level;
2. Adoption of innovative teaching and training methods;
3. Improvement in result of vocational students of Class X or Class XII;

4. Continuous upgradation of knowledge and skills related to the vocational pedagogy, communication skills and vocational subject;
5. Membership of professional society at District, State, Regional, National and International level;
6. Development of teaching-learning materials in the subject area;
7. Efforts made in developing linkages with the Industry/Establishments;
8. Efforts made towards involving the local community in Vocational Education
9. Publication of papers in National and International Journals;
10. Organisation of activities for promotion of vocational subjects;
11. Involvement in placement of students/student support services.

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10. LIST OF REVIEWERS

Draft To be reviewed.

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