# LEARNING OUTCOME BASED VOCATIONAL CURRICULUM

## JOB ROLE:

## Domestic Data Entry Operator

(QUALIFICATION PACK: Ref. Id. SSC/Q2212)

## SECTOR: IT-ITeS

## Classes 9 and 10

PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION
Shyamla Hills, Bhopal – 462 002, M.P., India
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IT/ ITES – Domestic Data Entry Operator

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PSS Central Institute of Vocational Education, NCERT, Shyamla Hills, Bhopal

# FOREWORD

The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE) a constituent of the National Council of Educational Research and Training (NCERT) is spearheading the efforts of developing learning outcome based curricula and courseware aimed at integrating both vocational and general qualifications to open pathways of career progression for students. It is a part of Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education (CSSVSHSE) launched by the Ministry of Human Resource Development, Government of India in 2012. The PSS Central Institute of Vocational Education (PSSCIVE) is developing curricula under the project approved by the Project Approval Board (PAB) of *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA). The main purpose of the competency based curricula is to bring about the improvement in teaching-learning process and working competences through learning outcomes embedded in the vocational subject.

It is a matter of great pleasure to introduce this learning outcome based curriculum as part of the vocational training packages for the job role of **IT/ ITes – Domestic Data Entry 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 Educational Research & Training

# PREFACE

India today stands poised at a very exciting juncture in its saga. The potential for achieving inclusive growth are immense and the possibilities are equally exciting. The world is looking at us to deliver sustainable growth and progress. To meet the growing expectations, India will largely depend upon its young workforce. The much-discussed demographic dividend will bring sustaining benefits only if this young workforce is skilled and its potential is channelized in the right direction.

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

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

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

Finally, for transforming the proposed curriculum design into a vibrant reality of implementation, all the institutions involved in the delivery system shall have to come together with a firm commitment and they should secure optimal community support. The success of this curriculum depends upon its effective implementation and it is expected that the managers of vocational education and training system, including subject teachers will make efforts to create better facilities, develop linkages with the world of work and foster a conducive environment as per the content of the curriculum document.

The PSSCIVE, Bhopal remains committed in bringing about reforms in the vocational education and training system through the learner-centric curricula and courseware. We hope that this document will prove useful in turning out more competent Indian workforce for the 21st Century.

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

# ACKNOWLEDGEMENTS

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

We are grateful to the reviewers, Sanjay Agrawal, Professor, Department of Computer Engineering and Application, National Institute of Technical Teachers Training and Research (NITTTR), Shyamla Hills, Bhopal, for their earnest effort and contributions in the development of this learning outcome based curriculum. Their contributions are dully acknowledged.

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

We are also grateful to the Course Coordinator Dipak D. Shudhalwar, Associate Professor (CSE) and Head Computer Center, PSSCIVE, for bringing out this curriculum in the final form.

PSSCIVE Team

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# 1. COURSE OVERVIEW

**COURSE TITLE: Domestic Data Entry Operator**

Domestic Data Entry Operator in the IT-ITeS Industry is also known as Data Entry Operator. Individuals are responsible to provide daily work reports and work on daily hour bases. The individual is responsible for electronic entry of data from the client side to the office site or vice-versa. Individual tasks vary depending on the size and structure of the organization. This job requires the individual to have thorough knowledge of various technology trends and processes as well as have updated knowledge about database management systems and IT initiatives. The individual should have fast and accurate typing/data encoding. This job involves working in a personal computer, and appropriate software to enter accurate data regarding different issues like retrieving data from a computer or to a computer

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

- ✓ Apply effective oral and written communication skills to interact with people and customers;
- ✓ Identify the principal components of a computer system;
- ✓ Demonstrate the basic skills of using computer;
- ✓ Demonstrate self-management skills;
- ✓ Demonstrate the ability to provide a self-analysis in context of entrepreneurial skills and abilities;
- ✓ Demonstrate the knowledge of the importance of green skills in meeting the challenges of sustainable development and environment protection;
- ✓ Work safely on computer.
- ✓ Start the computer.
- ✓ Open and use the related software.
- ✓ Exit from the software.
- ✓ Shut down the computer.
- ✓ Use the computer for data entry process.
- ✓ Collect all necessary information about the query.
- ✓ Log any decision about the query on the data entry tracking form.
- ✓ Follow Rules and guidelines for data entry.
- ✓ Handle queries.
- ✓ Undertake data entry with speed and accuracy.
- ✓ Identify and control hazards in the workplace that pose a danger or threat to their safety or health, or that of others.

**COURSE REQUIREMENTS:** The learner should have the basic reading and writing skills in English and Hindi.

**COURSE LEVEL:** This is a beginner level course meant for class 9 and 10.

**COURSE DURATION:** **400 Hours**
Class 9 : 200 hrs
Class 10 : 200 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 | 20 | **10** |
| | Unit 2: Self-management Skills | 10 | |
| | Unit 3: Basic ICT Skills | 20 | |
| | Unit 4: Entrepreneurial Skills | 15 | |
| | Unit 5: Green Skills | 10 | |
| | **Total** | **75** | **10** |
| **Part B** | **Vocational Skills** | | |
| | Unit 1: Introduction to IT–ITeS Industry | 05 | **30** |
| | Unit 2: Data Entry and Keyboarding Skills | 15 | |
| | Unit 3: Digital Documentation (Elementary) | 25 | |
| | Unit 4: Electronic Spreadsheet (Elementary) | 25 | |
| | Unit 5: Digital Presentation | 25 | |
| | **Total** | **95** | **30** |
| **Part C** | **Practical Work** | | |
| | Practical Examination | 6 | 15 |
| | Written Test | 1 | 10 |
| | Viva Voce | 3 | 10 |
| | **Total** | **10** | **35** |
| **Part D** | **Project Work/Field Visit** | | |
| | Practical File/ Student Portfolio | 10 | 10 |
| | Viva Voce | 5 | 5 |
| | **Total** | **15** | **15** |
| **Part E** | **Continuous and Comprehensive Evaluation (CCE)** | **05** | **10** |
| | **Total Hours** | **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** | | |
| | Communication Skills | 20 | **10** |
| | Self-management Skills | 10 | |
| | Basic ICT Skills | 25 | |
| | Entrepreneurial Skills | 15 | |
| | Green Skills | 10 | |
| | **Total** | **80** | **10** |
| **Part B** | **Vocational Skills** | | |
| | Unit 1: Digital Documentation (Advanced) | 25 | **30** |
| | Unit 2: Electronic Spreadsheet (Advanced) | 25 | |
| | Unit 3: Database Management System | 30 | |
| | Unit 4: Maintain Health, Safety and Secure Working Environment | 15 | |
| | **Total** | **95** | **30** |
| **Part C** | **Practical Work** | | |
| | Practical Examination | 6 | 15 |
| | Written Test | 1 | 10 |
| | Viva Voce | 3 | 10 |
| | **Total** | **10** | **35** |
| **Part D** | **Project Work/Field Visit** | | |
| | Practical File/ Student Portfolio | 10 | 10 |
| | Viva Voce | 5 | 5 |
| | **Total** | **15** | **15** |
| **Part E** | **Continuous and Comprehensive Evaluation (CCE)** | **05** | **10** |
| | **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

Upon successful completion of the course by the candidate, the Central/ State Examination Board for Secondary Education and the respective Sector Skill Council will certify the competencies.

The National Skills Qualifications Framework (NSQF) is based on outcomes referenced to the National Occupation Standards (NOSs), rather than inputs. The NSQF level descriptors, which are the learning outcomes for each level, include the process, professional knowledge, professional skills, core skills and responsibility. The assessment is to be undertaken to verify that individuals have the knowledge and skills needed to perform a particular job and that the learning programme undertaken has delivered education at a given standard. It should be closely linked to certification so that the individual and the employer could come to know the competencies acquired through the vocational subject or course. The assessment should be reliable, valid, flexible, convenient, cost effective and above all it should be fair and transparent. Standardized assessment tools should be used for assessment of knowledge of students. Necessary arrangements should be made for using technology in assessment of students.

## KNOWLEDGE ASSESSMENT (THEORY)

**Knowledge Assessment** should include two components: one comprising of internal assessment and second an external examination, including theory examination to be conducted by the Board.

The assessment tools shall contain components for testing the knowledge and application of knowledge. The knowledge test can be objective paper based test or short structured questions based on the content of the curriculum.

**WRITTEN TEST**

It allows candidates to demonstrate that they have the knowledge and understanding of a given topic. Theory question paper for the vocational subject should be prepared by the subject experts comprising group of experts of academicians, experts from existing vocational subject experts/teachers, and subject experts from university/colleges or industry. The respective Sector Skill Council should be consulted by the Central/State Board for preparing the panel of experts for question paper setting and conducting the examinations.

The blue print for the question paper may be as follows:

**Duration: 3 hrs** **Max. Mark: 30**

| | | No. of Questions | | | |
|---|---|---|---|---|---|
| S.No. | Typology of Question | Very Short Answer (1 mark) | Short Answer (2 Marks) | Long Answer (3 Marks) | Marks |
| 1. | Remembering – (Knowledge based simple recall questions, to know specific facts, terms, concepts, principles, or theories; identify, define or recite, information) | 2 | 1 | 2 | 10 |
| 2. | Understanding – (Comprehension – to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information) | 1 | 2 | 2 | 11 |
| 3. | Application – (Use abstract information in concrete situation, to apply knowledge to new situations: Use given content to interpret a situation, private an example, or solve a problem) | 0 | 1 | 1 | 05 |
| 4. | High Order Thinking Skills – (Analysis & Synthesis – Classify, compare, contrast, or differentiate between different pieces of information; Organize and/ or integrate unique pieces of information from a variety of sources) | 0 | 1 | 0 | 02 |
| 5. | Evaluation – (Appraise, judge, and/or justify the value or worth of 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.

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 in Hours |
|---|---|---|
| 1. | Unit 1: Communication Skills – I | 20 |
| 2. | Unit 2: Self-management Skills – I | 10 |
| 3. | Unit 3: Basic ICT Skills – I | 20 |
| 4. | Unit 3: Entrepreneurial Skills – I | 15 |
| 5. | Unit 4: Green Skills – I | 10 |
| | **Total** | **75** |

| **Unit 1: Communication Skills – I** | | | | |
|---|---|---|---|---|
| **S. No.** | **Learning Outcome** | **Theory (08 Hours)** | **Practical (12 Hours)** | **20 Hrs** |
| 1. | Demonstrate knowledge of various methods of communication. | • Methods of communication.<br>• Verbal.<br>• Non-verbal.<br>• Visual. | • Writing pros and cons of written, verbal and non-verbal communication.<br>• Listing do's and don'ts for avoiding common body language mistakes. | 05 |
| 2. | Identify elements of communication cycle. | • Meaning of communication<br>• Importance of communication skills<br>• Elements of communication cycle–<br>• (i) sender,<br>• (ii) ideas,<br>• (iii) encoding,<br>• (iv) communication channel,<br>• (v) receiver,<br>• (vi) decoding, and<br>• (vii) feedback | • Draw a diagram of communication cycle<br>• Role plays on communication process related to the sector/ job role. | 05 |
| 3. | Identify the factors affecting our perspectives in communication | • Perspectives in communication.<br>• Factors affecting perspectives in communication.<br>• Visual perception.<br>• Language.<br>• Past experience.<br>• Prejudices.<br>• Feelings. | • Group discussion on factors affecting perspectives in communication.<br>• Sharing of experiences on factors affecting perspectives.<br>• Sharing experiences on factors affecting communication at workplace. | 05 |

| | | | | |
|---|---|---|---|---|
| | | • Environment. | | |
| 4. | Demonstrate the knowledge of basic writing skills | • Writing skills related to the following:<br>• Phrases<br>• Kinds of sentences<br>• Parts of sentence<br>• Parts of speech<br>• Use of articles<br>• Construction of a paragraph | • Demonstration and practice of writing sentences and paragraphs on topics related to the subject. | 05 |
| | | | **Total Duration in Hours** | **20** |

| **Unit 2: Self Management Skills – I** | | | | |
|---|---|---|---|---|
| **S. No.** | **Learning Outcome** | **Theory (07 Hours)** | **Practical (03 Hours)** | **10 Hrs** |
| 1. | Describe the meaning and importance of self-management. | • Meaning of self-management.<br>• Positive results of self-management.<br>• Self-management skills. | • Identification of self-<br>• management skills<br>• Strength and<br>• weakness analysis. | 05 |
| 2. | Identify the factors that helps in building self-confidence . | • Factors that help in building self-confidence – social, cultural, and physical factors<br>• 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. | • Role play exercises on building self-confidence.<br>• Use of positive metaphors/ words.<br>• Positive stroking on wakeup and before going bed.<br>• Helping others and working for community. | 05 |
| | | | **Total Duration in Hours** | **10** |

| **Unit 3: Basic ICT Skills – I** | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (10 Hours)** | **Practical (10 Hours)** | **20 Hrs** |
| 1. | Demonstrate the knowledge of the role of Information and Communication Technology (ICT) in day-to-day life and workplace | • Introduction to ICT<br>• Role and importance of ICT in personal life and at workplace<br>• ICT in our daily life (examples)<br>• ICT tools – Mobile, tab, radio, TV, email, etc. | • Discussion on the role and importance of ICT in personal life and at workplace.<br>• Preparing posters / collages for showing the role of ICT at workplace | 04 |
| 2. | Identify components of basic computer | • Computer system – Central Processing Unit (CPU), memory, motherboard, | • Connecting the cables and peripherals to the Central Processing Unit | 07 |

| | | | | |
|---|---|---|---|---|
| | system and their functions | storage devices<br>• Hardware and software of a computer system<br>• Role and functions of Random Access<br>• Memory (RAM) and Read<br>• Only Memory (ROM)<br>• Role and functions of Central Processing Unit<br>• Procedure for starting and shutting down a computer | • Starting and shutting down a computer<br>• Group discussion on the various aspects of hardware and software | |
| 3. | Demonstrate use of various components and peripherals of computer system | • Peripherals devices and their uses – mouse, keyboard, scanner, webcam, etc. of a computer system | • Identification of various parts and peripherals of a computer<br>• Demonstration and practice on the use of mouse<br>• Demonstration and practice on the use of keyboard<br>• Demonstration of the uses of printers, webcams, scanner and other peripheral devices<br>• Drawing diagram of computer system and labelling it | 05 |
| 4. | Demonstrate basic computer skills | • Primary operations on a computer system – input, process, storage, output, communication networking, etc. | • Identification of the various input and output units and explanation of their purposes | 04 |
| | | | **Total Duration in Hours** | **20** |

| **Unit 3: Basic ICT Skills – II** | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (10 Hours)** | **Practical (10 Hours)** | **20 Hrs** |
| 1. | Distinguish between different operating systems | • Classes of operating systems<br>• Menu, icons and task bar on the desktop<br>• File concept, file operations, file organization, directory structures, and file-system structures<br>• Creating and managing files and folders | • Identification of task bar, icons, menu, etc.<br>• Demonstration and practising of creating, renaming and deleting files and folders, saving files in folders and sub-folders, restoring files and folders from recycle bin | 17 |
| 2. | Apply basic skills for care and maintenance of computer | • Importance and need of care and maintenance of computer<br>• Cleaning computer components<br>• Preparing maintenance | • Demonstration of the procedures to be followed for cleaning, care and maintenance of hardware and software | 03 |

| | | | | |
|---|---|---|---|---|
| | | schedule<br>• Protecting computer against viruses<br>• Scanning and cleaning viruses and removing SPAM files, temporary files and folders | | |
| | | | **Total Duration in Hours** | **20** |

| **Unit 4: Entrepreneurial Skills – I** | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (06 Hours)** | **Practical (09 Hours)** | **15 Hrs** |
| 1. | Identify various types of business activities | • Types of businesses – service, manufacturing, hybrid.<br>• Types of businesses found in our community Business activities around us. | • Prepare posters of business activities found in cities/ villages, using pictures.<br>• Discuss the various types of activities, generally adopted by small businesses in a local community.<br>• Best out of waste.<br>• Costing of the product made out of waste.<br>• Selling of items made from waster materials.<br>• Prepare list of businesses that provides goods and services in exchange for money. | 09 |
| 2. | Demonstrate the knowledge of distinguishing characteristics of entrepreneurship | • Meaning of entrepreneurship development.<br>• Distinguishing characteristics of entrepreneurship.<br>• Role and rewards of entrepreneurship. | • Prepare charts showing advantages of entrepreneurship over wages.<br>• Group discussions on role and features of entrepreneurship.<br>• Lectures/presentations by entrepreneurs on their experiences and success stories.<br>• Identify core skills of successful entrepreneur. | 06 |
| | | | **Total Duration in Hours** | **15** |

| **Unit 5: Green Skills – I** | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (03 Hours)** | **Practical (07 Hours)** | **10 Hrs** |
| 5. | Demonstrate the knowledge of the factors influencing natural resource conservation. | • Introduction to environment.<br>• Relationship between society and environment, ecosystem and factors causing imbalance.<br>• Natural resource | • Group discussion on hazards of deteriorating environment.<br>• Prepare posters showing environment conservation.<br>• Discussion on various factors | 05 |

| | | | | |
|---|---|---|---|---|
| | | conservation.<br>• Environment protection and conservation. | that influence our environment. | |
| 6. | Describe the importance of green economy and green skills. | • Definition of green economy<br>• Importance of green economy | • Discussion on the benefits of green skills and importance of green economy.<br>• Prepare a Poster showing the importance of green economy with the help of newspaper/ magazine cuttings. | 05 |
| | | | **Total Duration in Hours** | **10** |

# Class IX, Part B: Vocational Skills

| S. No. | Units | Duration in Hours |
|---|---|---|
| 1. | Unit 1: Introduction to IT–ITeS Industry | 05 |
| 2. | Unit 2: Data Entry and Keyboarding Skills | 15 |
| 3. | Unit 3: Digital Documentation (Elementary) | 30 |
| 4. | Unit 4: Electronic Spreadsheet (Elementary) | 20 |
| 5. | Unit 5: Digital Presentation | 25 |
| | **Total Duration** | **95** |

| **Unit 1: Introduction to IT–ITeS Industry** | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (3 Hours)** | **Practical (2 Hours)** | **05 Hrs** |
| 1. | Appreciate the application of IT in IT-ITeS industry | • Introduction to IT and ITeS,<br>• BPO services,<br>• BPM industry in India,<br>• Structure of the IT-BPM industry,<br>• Applications of IT in home computing, everyday life, library, workplace, education, entertainment, communication, business, science and engineering, banking, insurance, marketing, health care, IT in the government and public service, | • Identify and list the various IT enabled services,<br>• Observe the application of IT in various areas. | 5 |
| | | | **Total Duration in Hours** | **5** |

| Unit 2: Data Entry and Keyboarding Skills | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (05 Hours)** | **Practical (10 Hours)** | **15 Hrs** |
| 1. | Use data entry tools keyboard and mouse | • Keyboarding Skills,<br>• Types of keys on keyboard,<br>• Numeric keypad,<br>• Home keys, Guide keys,<br>• Typing and deleting text,<br>• Typing ergonomics,<br>• Positioning of fingers on the keyboard,<br>• Allocation of keys to fingers on four different rows,<br>• Pointing device – Mouse,<br>• Mouse operations. | • Identify the keys and its use on the keyboard,<br>• Demonstrate to use various keys on the keyboard,<br>• Demonstrate to type the text, numbers, special character using appropriate keys on the keyboard,<br>• Practice the correct typing ergonomics,<br>• Practice to place fingers on correct key in four different row of keyboard,<br>• Practice various mouse operations. | 7 |
| 2. | Use typing software | • Introduction to Rapid Typing Tutor,<br>• Touch typing technique,<br>• User interface of Typing Tutor,<br>• Typing text and interpret results,<br>• Working with lesson editor,<br>• Calculating typing speed,<br>• Typing rhythm. | • Identify the user interface of typing tutor,<br>• Practice to type text in typing tutor software and interpret the results,<br>• Practice to work in lesson editor,<br>• Calculate the typing speed,<br>• Practice to improve typing using typing tutor software. | 8 |
| | | | **Total Duration in Hours** | **15** |

| Unit 3: Digital Documentation (Elementary) | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (12 Hours)** | **Practical (18 Hours)** | **30 Hrs** |
| 3. | Start the word processing application | • Introduction to word processing,<br>• Word processing applications,<br>• Introduction to LibreOffice Writer,<br>• Starting LibreOffice Writer,<br>• Creating a document,<br>• Parts of Writer window,<br>• Cursor and mouse pointer. | • List the available word processing applications. Introduce with the parts of the main window.<br>• Change document views.<br>• Start a new document.<br>• Open an existing document.<br>• Save a document.<br>• Close a document.<br>• Use the Navigator. | 5 |
| 4. | Edit the document | • Text editing – Undo and Redo,<br>• Moving and copying text,<br>• Copy and Paste,<br>• Selecting text,<br>• Selection criteria,<br>• Selecting non-consecutive | • Type some text in the document and edit it,<br>• Demonstrate to use undo and redo option,<br>• Use the keyboard and mouse options to select, cut, copy, paste, and move text. | 5 |

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| | | text items,<br>• Selecting a vertical block of text,<br>• Find and replace option,<br>• Jumping to the page number,<br>• Non-printing characters,<br>• Checking spelling and grammar,<br>• Using synonyms and the thesaurus. | • Demonstrate to select non-consecutive text items, vertical block of text,<br>• Search the word from the text and replace it with another word.<br>• Jump to the given page number in a document,<br>• Insert non-printing characters in a document,<br>• Check spelling and grammar and apply the changes to the document.<br>• Demonstrate to use synonyms and thesaurus. | |
| 5. | Format the document | • Page style dialog,<br>• Formatting text - Removing manual formatting, Common text formatting, Changing text case, Superscript and Subscript,<br>• Formatting paragraph – Indenting paragraphs, Aligning paragraphs, Font colour, highlighting, and background colour,<br>• Using bullets and numbering,<br>• Assigning colour, border and background to paragraph<br>• Page formatting – setting up basic page layout using styles, Inserting page break, Creating header/footer and page numbers, Defining borders and backgrounds, Inserting images shapes, special characters in a document, Dividing page into columns, Formatting the shape or image. | • Apply various text formatting options for the text,<br>• Demonstrate to format paragraphs – indent/align paragraphs, assign font colour, highlighting, and background colour,<br>• Assign number or bullets to the lists items,<br>• Demonstrate to assign colour, border and background to paragraph,<br>• Demonstrate the page formatting – set up basic page layout using styles, Insert page break, Create header/footer and page numbers, Define borders and backgrounds, Insert images shapes, special characters in a document, Divide page into columns, Format the shape or image. | 6 |
| 6. | Create and use table | • Creating table in Writer,<br>• Inserting row and column in a table,<br>• Deleting rows and columns,<br>• Splitting and merging tables,<br>• Deleting a table,<br>• Copying a table,<br>• Moving a table. | • Demonstrate and do the following in Writer:<br>• Create table,<br>• Insert and delete row and column in a table,<br>• Split and merge tables,<br>• Delete a table,<br>• Copy or move from one location to another location of document. | 5 |
| 7. | Print the document | • Printing options in Writer.<br>• Print preview,<br>• Controlling printing, | • Demonstrate to print the document, selected pages in the document, | 3 |

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| | | • Printing all pages, single and multiple pages. | • Print the document with various options,<br>• Preview pages before printing. | |
| 8. | Print the letters using mail merge | • Concept of mail merge in word processing,<br>• Creating a main document,<br>• Creating the data source,<br>• Entering data in the fields,<br>• Merging the data source with main document,<br>• Editing individual document,<br>• Printing the merged letter,<br>• Saving the merged letter. | • Demonstrate to print the letters using mail merge, do the following to achieve<br>• Create a main document,<br>• Create the data source,<br>• Enter data in the fields,<br>• Merge the data source with main document,<br>• Edit individual document,<br>• Print the merged letter,<br>• Save the merged letter. | 6 |
| | | | **Total Duration in Hours** | **30** |

| **Unit 4: Spreadsheet Applications (Elementary)** | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (08 Hours)** | **Practical (12 Hours)** | **20 Hrs** |
| 1. | Create a Spreadsheet | • Introduction to spreadsheet application,<br>• Starting LibreOffice Calc,<br>• Parts of LibreOffice Calc,<br>• Worksheet – Rows and columns, Cell and cell address,<br>• Range of cell – column range, row range, row and column range. | • Start the LibreOffice Calc,<br>• Identify the parts of Calc,<br>• Identify the rows number, column number, cell address,<br>• Define the range of cell,<br>• Identify row range, column range, row & column range. | 5 |
| 2. | Enter and edit the text in spreadsheet | • Different types of data,<br>• Entering data – Label, Values, Formula<br>• Formula, how to enter formula,<br>• Mathematical operators used in formulae,<br>• Simple calculations using values and operators,<br>• Formulae with cell addresses and operators,<br>• Commonly used basic functions in Calc – SUM, AVERAGE, MAX, MIN, Count<br>• Use of functions to do calculations. | • Demonstrate to enter the text, numeric data in a cell,<br>• Identify the label, values and formula in the cell,<br>• Demonstrate to enter formula in a cell,<br>• Construct the formula using mathematical operators,<br>• Identify formulae with cell addresses and operators,<br>• Identify the correct syntax of formula,<br>• Use the basic functions to perform calculations on data. | 5 |
| 3. | Format data in the spreadsheet | • Formatting tool,<br>• Use of dialog boxes to format values,<br>• Formatting a range of cells | • Identify the formatting tool,<br>• Demonstrate to use of dialog boxes to format values,<br>• Demonstrate to format range | 5 |

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| | | with decimal places,<br>• Formatting a range of cells to be seen as labels,<br>• Formatting of a cell range as scientific,<br>• Formatting a range of cells to display times,<br>• Formatting alignment of a cell range,<br>• Speeding up data entry using the fill handle,<br>• Uses of fill handle for copying formulae. | of cells with decimal places,<br>• Demonstrate to format a range of cells to labels,<br>• Demonstrate to format of a cell range as scientific,<br>• Demonstrate to format a range of cells to display time,<br>• Demonstrate to align the cell data range,<br>• Demonstrate to create number series using fill handle,<br>• Copy formula by dragging the formula using fill handle. | |
| 4. | Use Referencing | • Concept of referencing,<br>• Relative referencing,<br>• Mixed referencing,<br>• Absolute referencing. | • Demonstrate to use Relative referencing in spreadsheet,<br>• Demonstrate to use Mixed referencing in spreadsheet,<br>• Demonstrate to use Absolute referencing in spreadsheet. | 3 |
| 5. | Introduce the types of charts in Calc | • Importance of chart in spreadsheet,<br>• Types of chart,<br>• Example of chart. | • List the different types of chart supported by Calc,<br>• Illustrate the example of chart in Calc. | 2 |
| | | | **Total Duration in Hours** | **20** |

| **Unit 5: Digital Presentation** | | | | |
|---|---|---|---|---|
| **SN** | **Learning Outcome** | **Theory (10 Hours)** | **Practical (15 Hours)** | **25 Hrs** |
| 1. | Describe the quality of good presentation | • Concept of presentation,<br>• Elements of presentation,<br>• Characteristics of good quality presentation | • Identify and list the elements of presentation,<br>• List the characteristics of good quality presentation. | 2 |
| 2. | Create a presentation | • Introduction to presentation software,<br>• Starting Impress,<br>• Parts of Impress window,<br>• Closing Impress,<br>• Creating a presentation using template,<br>• Selecting slide layout,<br>• Saving a presentation,<br>• Running a slide show,<br>• Save a presentation in PDF,<br>• Closing a presentation,<br>• Using Help. | • Start Impress<br>• Identify and name the various components of main Impress window<br>• Observe the different workspace views.<br>• Create a new presentation using wizard.<br>• Run the presentation,<br>• Save the presentation,<br>• Close the presentation,<br>• Demonstrate to use Help in presentation. | 4 |
| 3. | Work with slides | • Inserting a duplicate slide,<br>• Inserting new slides,<br>• Slide layout,<br>• Copying and moving slides, | • Demonstrate to insert a new slide and duplicate slide in a presentation,<br>• Change the slide layout, | 4 |

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| | | • Deleting and renaming slides in presentation,<br>• Copying, moving and deleting contents of slide,<br>• View a presentation,<br>• Controlling the size of the view,<br>• Workspace views – Normal, Outline, Notes, Slide sorter view. | • Demonstrate to copy and move slides in the presentation,<br>• Demonstrate to copy, move and delete contents of the slide,<br>• Demonstrate to view a presentation in different views. | |
| 4. | Format the text in presentation | • Formatting toolbar,<br>• Various formatting features,<br>• Text alignment,<br>• Bullets and numbering. | • Identify and list the various options in formatting toolbar,<br>• Apply the appropriate formatting option to the presentation in Impress,<br>• Align the text in presentation,<br>• Apply bullets and numbering to the list items in presentation | 4 |
| 5. | Create and use table in presentation | • Inserting tables in presentation,<br>• Entering and editing data in a table,<br>• Selecting a cell, row, column, table,<br>• Adjusting column width and row height,<br>• Table borders and background | • Demonstrate the following:<br>• Insert table in presentation,<br>• Enter and edit data in a table,<br>• Select a cell, row, column, table,<br>• Adjust column width and row height,<br>• Assign table borders and background. | 4 |
| 6. | Insert and format image in presentation | • Inserting an image from a file,<br>• Inserting an image from the gallery,<br>• Formatting images,<br>• Moving images,<br>• Resizing images,<br>• Rotating images,<br>• Formatting using the Image toolbar,<br>• Drawing graphic objects – line, shapes,<br>• Grouping and un-grouping objects | • Demonstrate to insert an image from file, gallery in presentation,<br>• Apply formatting options to image in presentation,<br>• Demonstrate to move, resize and rotate images,<br>• Apply formatting options of Image toolbar,<br>• Drawing line, shapes using graphic objects,<br>• Demonstrate to group and un-group objects. | 4 |
| 7. | Work with slide master | • Slide masters,<br>• Creating the slide masters,<br>• Applying the slide masters to all slide,<br>• Adding transitions. | • Create the slide masters,<br>• Apply the slide masters to the presentation,<br>• Add transitions to presentation. | 3 |
| | | | **Total Duration in Hours** | **25** |

## CLASS 10

# Part A: Employability Skills

| S. No. | Units | Duration in Hours |
|---|---|---|
| 1. | Unit 1: Communication Skills | 20 |
| 2. | Unit 2: Self-management Skills | 10 |
| 3. | Unit 3: Basic ICT Skills | 20 |
| 4. | Unit 4: Entrepreneurial Skills | 15 |
| 5. | Unit 5: Green Skills | 10 |
| | **Total** | **75** |

| **Unit 1: Communication Skills – II** | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (12 Hours)** | **Practical (08 Hours)** | **20 Hrs** |
| 1. | Demonstrate knowledge of various methods of communication. | • Methods of communication<br>• Verbal.<br>• Non-verbal.<br>• Visual. | • Writing pros and cons of written, verbal and non-verbal communication<br>• Listing do's and don'ts for avoiding common body language mistakes | 04 |
| 2. | Provide descriptive and specific feedback. | • Communication cycle and importance of feedback.<br>• Meaning and importance of feedback.<br>• Descriptive feedback - written comments or conversations.<br>• Specific and non-specific feedback. | • Constructing sentences for providing descriptive and specific feedback. | 04 |
| 3. | Apply measures to overcome barriers in communication. | • Barriers to effective communication – types and factors.<br>• Measures to overcome barriers in effective. Communication. | • Enlisting barriers to effective communication.<br>• Applying measures to overcome barriers in communication. | 04 |
| 4. | Apply principles of communication. | • Principles of effective communication.<br>• 7 Cs of effective communication. | • Constructing sentences that convey all facts required by the receiver.<br>• Expressing in a manner that shows respect to the receiver of the message<br>• Exercises and games on applying 7Cs of effective communication. | 04 |
| 5. | Demonstrate basic | • Writing skills to the following: | • Demonstration and practice | 04 |

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| | writing skills. | • Sentence<br>• Phrase<br>• Kinds of Sentences<br>• Parts of Sentence<br>• Parts of Speech<br>• Articles<br>• Construction of a Paragraph. | of writing sentences and paragraphs on topics related to the subject. | |
| | | | **Total Duration in Hours** | **20** |

| **Unit 2: Self-management Skills – II** | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (05 Hours)** | **Practical (05 Hours)** | **10 Hrs** |
| 1. | Apply stress management techniques | • Meaning and importance of stress management<br>• Stress management techniques – physical exercise, yoga, meditation<br>• Enjoying, going to vacations and holidays with family and friends<br>• Taking nature walks | • Exercises on stress management techniques – yoga, meditation, physical exercises.<br>• Preparing a write-up on an essay on experiences during a holiday trip. | 04 |
| 2. | Demonstrate the ability to work independently | • Importance of the ability to work independently.<br>• Describe the types of self-awareness.<br>• Describe the meaning of self-motivation and self-regulation. | • Demonstration on working independently goals.<br>• Planning of an activity Executing tasks in a specific period, with no help or directives.<br>• Demonstration on the qualities required for working independently. | 06 |
| | | | **Total Duration in Hours** | **10** |

| **Unit 3: Basic ICT Skills – II** | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (10 Hours)** | **Practical (10 Hours)** | **20 Hrs** |
| 3. | Distinguish between different operating systems | • Classes of operating systems<br>• Menu, icons and task bar on the desktop<br>• File concept, file operations, file organization, directory structures, and file-system structures<br>• Creating and managing files and folders | • Identification of task bar, icons, menu, etc.<br>• Demonstration and practising of creating, renaming and deleting files and folders, saving files in folders and sub-folders, restoring files and folders from recycle bin | 17 |
| 4. | Apply basic skills for care and maintenance of computer | • Importance and need of care and maintenance of computer<br>• Cleaning computer | • Demonstration of the procedures to be followed for cleaning, care and maintenance of hardware | 03 |

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| | | components<br>• Preparing maintenance schedule<br>• Protecting computer against viruses<br>• Scanning and cleaning viruses and removing SPAM files, temporary files and folders | and software | |
| | | | **Total Duration in Hours** | **20** |

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

| **Unit 5: Green Skills – II** | | | | |
|---|---|---|---|---|
| **Sn** | **Learning Outcome** | **Theory (07 Hours)** | **Practical (03 Hours)** | **10 Hrs** |
| 1. | Demonstrate the knowledge of importance, problems and solutions related to sustainable development | • Definition of sustainable development.<br>• Importance of sustainable development.<br>• Problems related to sustainable development. | • Identify the problem related to sustainable development in the community.<br>• Group discussion on the importance of respecting and conserving indigenous knowledge and cultural heritage.<br>• Discussion on the responsibilities and benefits of environmental. citizenship, including the conservation and protection of | 10 |

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| | | | environmental values.<br>• Preparing models on rain water harvesting, drip / sprinkler irrigation, vermin-compost, solar energy, solar cooker, etc. | |
| | | | **Total Duration in Hours** | **10** |

# Part B: Vocational Skills

| S. No. | Units | Duration in Hours |
|---|---|---|
| 1. | Unit 1: Digital Documentation (Advanced) | 25 |
| 2. | Unit 2: Electronic Spreadsheet (Advanced) | 25 |
| 3. | Unit 3: Database Management System | 30 |
| 4. | Unit 4: Maintain Health, Safety and Secure Working Environment | 15 |
| | **Total Duration** | **95** |

| **Unit 1: Digital Documentation (Advanced)** | | | | |
|---|---|---|---|---|
| **S. No.** | **Learning Outcome** | **Theory (10 Hours)** | **Practical (15 Hours)** | **25 Hrs** |
| 1. | Apply Styles in the document | • Style categories in Writer.<br>• Styles and Formatting window.<br>• Fill Format.<br>• Creating and updating new style from selection<br>• Load style from template or another document.<br>• Creating a new style using drag-and-drop.<br>• Applying styles. | • List style categories in Writer.<br>• Select the style from the Styles and Formatting window.<br>• Use Fill Format to apply a style to many different areas quickly.<br>• Create and update new style from a selection.<br>• Load a style from a template or another document.<br>• Create a new style using drag-and-drop. | 7 |
| 2. | Insert and use images in document | • Options to insert image to document from various sources.<br>• Options to modify, resize, crop and delete an image.<br>• Drawing objects and its properties.<br>• Creating drawing objects and changing its properties.<br>• Resizing and grouping drawing objects.<br>• Positioning image in the text. | • Insert an image to document from various sources.<br>• Modify, resize, crop and delete an image.<br>• Create drawing objects<br>• Set or change the properties of a drawing object<br>• Resize and group drawing objects<br>• Position the image in the text | 7 |
| 3. | Create and use template | • Template in Writer.<br>• Using predefined templates. | • Create a template.<br>• Use predefined templates. | 6 |

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| | | • Creating a template.<br>• Set up a custom default template.<br>• Updating a document.<br>• Changing to a different template.<br>• Using the Template. | • Set up a custom default template.<br>• Update a document.<br>• Change to a different template.<br>• Use the Template. | |
| 4. | Create table of contents | • Table of contents.<br>• Hierarchy of headings.<br>• Customization of table of contents.<br>• Character styles.<br>• Maintaining a table of contents. | • Create table of contents.<br>• Define a hierarchy of headings.<br>• Customize a table of contents.<br>• Apply character styles.<br>• Maintain a table of contents. | 5 |
| | | | **Total Duration in Hours** | **25** |

| **Unit 2: Electronic Spreadsheet (Advanced)** | | | | |
|---|---|---|---|---|
| **S. No.** | **Learning Outcome** | **Theory (10 Hours)** | **Practical (15 Hours)** | **25 Hrs** |
| 1. | Analyse data using scenarios and goal seek. | • Using consolidating data.<br>• Creating subtotals.<br>• Using "what if" scenarios.<br>• Using "what if" tools<br>• Using goal seek and solver. | • Use consolidating data<br>• Create subtotals<br>• Use "what if" scenarios<br>• Use "what if" tools<br>• Use goal seek and solver | 4 |
| 2. | Link spreadsheet data | • Setting up multiple sheets.<br>• Creating reference to other sheets by using keyboard and mouse.<br>• Creating reference to other document by using keyboard and mouse.<br>• Relative and absolute hyperlinks<br>• Hyperlinks to the sheet.<br>• Linking to external data.<br>• Linking to registered data sources. | • Setup multiple sheets by inserting new sheets.<br>• Create reference to other sheets by using keyboard and mouse.<br>• Create reference to other document by using keyboard and mouse.<br>• Create, Edit and Remove hyperlinks to the sheet.<br>• Link to external data.<br>• Link to registered data source. | 5 |
| 3. | Share and review a spreadsheet | • Setting up a spreadsheet for sharing.<br>• Opening and saving a shared spreadsheet.<br>• Recording changes.<br>• Add, Edit and Format the comments.<br>• Reviewing changes – view, accept or reject changes.<br>• Merging and comparing. | • Set up a spreadsheet for sharing.<br>• Open and save a shared spreadsheet.<br>• Record changes.<br>• Add, Edit and Format the comments.<br>• Review changes – view, accept or reject changes.<br>• Merge and compare sheets. | 8 |
| 4. | Use Macros in spreadsheet | • Using the macro recorder.<br>• Creating a simple macro.<br>• Using a macro as a function. | • Use the macro recorder.<br>• Create a simple macro.<br>• Use a macro as a function. | 8 |

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| | | • Passing arguments to a macro.<br>• Passing the arguments are as values.<br>• Macros to work like built-in functions.<br>• Accessing cells directly.<br>• Sorting the columns using macro. | • Pass arguments to a macro.<br>• Pass the arguments are as values.<br>• Write macros that act like built-in functions<br>• Access cells directly.<br>• Sort the columns using macro. | |
| | | | **Total Duration in Hours** | **25** |

| **Unit 3: Database Management System** | | | | |
|---|---|---|---|---|
| **S. No.** | **Learning Outcome** | **Theory (10 Hours)** | **Practical (20 Hours)** | **30 Hrs** |
| 1. | Appreciate the concept of Database Management System | • Concept and examples of data and information,<br>• Concept of database,<br>• Advantages of database,<br>• Features of database,<br>• Concept and examples of Relational database,<br>• Concept and examples of of field, record, table, database,<br>• Concept and examples of Primary key, composite primary key, foreign key,<br>• Database management system (DBMS) software. | • Identify the data and information,<br>• Identify the field, record, table in the database,<br>• Prepare the sample table with some standard fields,<br>• Assign the primary key to the field,<br>• Identify the primary key, composite primary key, foreign key. | 5 |
| 2. | Create a table using table wizard | • Introduction to LibreOffice Base<br>• Database objects – tables, queries, forms, and reports of the database,<br>• Terms in database – table, field, record,<br>• Steps to create a table using table wizard,<br>• Data types in Base,<br>• Option to set primary key<br>• Table Data View dialog box | • Start the LibreOffice Base and observe the parts of main window,<br>• Identify the database objects<br>• Create the sample table in any category using wizard,<br>• Practice to create different tables from the available list and choosing fields from the available fields.<br>• Assign data types of field,<br>• Set primary key,<br>• Edit the table in design view,<br>• Enter the data in the fields. | 5 |
| 3. | Perform operations on table | • Inserting data in the table,<br>• Editing records in the table,<br>• Deleting records from the table,<br>• Sorting data in the table,<br>• Referential integrity, | • Demonstrate to :<br>• Insert data in the table,<br>• Edit records in the table,<br>• Delete records from table,<br>• Sort data in the table,<br>• Create and edit relationships | 6 |

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| | | • Creating and editing relationships – one to one, one to many, many to many,<br>• Field properties. | - one to one, one to many, many to many,<br>• Enter various field properties. | |
| 4. | Retrieve data using query | • Database query,<br>• Defining query,<br>• Query creation using wizard,<br>• Creation of query using design view,<br>• Editing a query,<br>• Applying criteria in query – single field, multiple fields, using wild card,<br>• Performing calculations,<br>• Grouping of data,<br>• Structured Query Language (SQL). | • Prepare a query for given criteria,<br>• Demonstrate to create query using wizard, and using design view,<br>• Edit a query,<br>• Demonstrate to apply various criteria in query – single field, multiple fields, using wild card,<br>• Performing calculations using query in Base,<br>• Demonstrate to group data,<br>• Use basic SQL commands, | 6 |
| 5. | Create Forms and Reports using wizard | • Forms in Base,<br>• Creating form using wizard,<br>• Steps to create form using Form Wizard,<br>• Options to enter or remove data from forms<br>• Modifying form,<br>• Changing label, background,<br>• Searching record using Form,<br>• Inserting and deleting record using Form View,<br>• Concept of Report in Base,<br>• Creating Report using wizard,<br>• Steps to create Report using Wizard. | • Illustrate the various steps to create Form using Form Wizard,<br>• Enter or remove data from Forms,<br>• Demonstrate to modify Forms,<br>• Demonstrate to change label, background,<br>• Search record using Form,<br>• Insert and delete record using Form View,<br>• Illustrate the various steps to create Report using Report Wizard,<br>• Demonstrate the various examples of Report. | 8 |
| | | | **Total Duration in Hours** | **30** |

| **Unit 4: Managing Health and Safety** | | | | |
|---|---|---|---|---|
| **S. No.** | **Learning Outcome** | **Theory (05 Hours)** | **Practical (10 Hours)** | **15 Hrs** |
| 1. | Maintain workplace safety | • Basic safety rules to follow at workplace – Fire safety, Falls and slips, Electrical safety, Use of first aid.<br>• Case Studies of hazardous. | • Practice to follow basic safety rules at workplace to prevent accidents and protect workers – Fire safety, Falls and slips, Electrical safety, Use of first aid. | 05 |
| 2. | Prevent Accidents and Emergencies | • Accidents and emergency,<br>• Types of Accidents,<br>• Handling Accidents | • Illustrate to handle accidents at workplace,<br>• Demonstrate to follow | 05 |

| | | | | |
|---|---|---|---|---|
| | | • Types of Emergencies. | evacuation plan and procedure in case of an emergency. | |
| 3. | Protect Health and Safety at work | • Hazards and sources of hazards,<br>• General evacuation procedures,<br>• Healthy living. | • Identify hazards and sources of hazards,<br>• identify the problems at workplace that could cause accidents,<br>• Practice the general evacuation procedures in case of an emergency. | 05 |
| | | | **Total Duration in Hours** | 15 |

# 6. ORGANISATION OF FIELD VISITS

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

Visit a data entry centre and observe the following: Location, Site, Office building, Computer Systems, Tools and Equipment, Printer, Scanner. During the visit, students should obtain the following information from the owner or the supervisor of the Data Centre:

1. Data Entry Centre.
2. Computer Infrastructure.
3. Sitting Posture of data entry operators.
4. Assistive technology.
5. Manpower engaged
6. Total expenditure of Data Entry Centre.
7. Total annual income.
8. Profit/Loss (Annual)
9. 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.

| S.No. | Item Name, Description & Specification | Quantity |
|---|---|---|
| | **HARDWARE** | |
| 1. | Computer with latest configuration or minimum Pentium Processor with 2 GB RAM, 512 GB HDD, 17" LED Monitor, NIC Card, 3 button Mouse, 105 keys key board and built-in speakers and mic. | 15 |
| 2. | Laser Printer Black | 01 |
| 3. | Inkjet Printers (Colour & Black) | 01 |
| 4. | Scanner | 01 |

| | | |
|---|---|---|
| 5. | Online UPS 5 KVA | 01 |
| 6. | 16 Port Switches | 01 |
| 7. | Air Conditioner 1.5 tonne | 02 |
| 8. | Telephone line (For Internet) | 01 |
| 9. | Fire extinguisher | 01 |
| | **SOFTWARE** | |
| 1. | Operating System Linux and Windows | |
| 2. | Anti Virus Latest version | |
| 3. | LibreOffice or MS Office latest version | |
| | **FURNITURE** | |
| 1. | Class room chairs and desks | 25 |
| 2. | Computer Tables | 15 |
| 3. | Straight back revolving & adjustable chairs (Computer Chairs) | 15 |
| 4. | Printer Tables | 02 |
| 5. | Trainers Table | 01 |
| 6. | Trainers Chair | 01 |
| 7. | Steel cupboards drawer type | 02 |
| 8. | Cabinet with drawer | 01 |
| 9. | Steel almirah big size | 01 |
| 10. | Steel almirah small size | 01 |

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

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

| Qualification | Minimum Competencies | Age Limit |
|---|---|---|
| Diploma in Computer Science/ Information Technology **OR** Bachelor Degree in Computer Application/ Science/ Information Technology (BCA, B. Sc. Computer Science/ Information Technology) **OR** Graduate with PGDCA **OR** DOEACC A Level Certificate.<br><br>The suggested qualification is the minimum criteria. However higher qualifications will also be acceptable. | The candidate should have a minimum of 1 year of work experience in the same job role. S/He should be able to communicate in English and local language. S/He should have knowledge of equipment, tools, material, Safety, Health & Hygiene. | 18-37 years (as on Jan. 01 (year))<br><br>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 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:

- Prepare session plans and deliver sessions which have a clear and relevant purpose and which engage the students;

- Deliver education and training activities to students, based on the curriculum to achieve the learning outcomes;
- Make effective use of learning aids and ICT tools during the classroom sessions;
- 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;
- 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;
- Identify the weaknesses of students and assist them in up-gradation of competency;
- Cater to different learning styles and level of ability of students;
- Assess the learning needs and abilities, when working with students with different abilities
- Identify any additional support the student may need and help to make special arrangements for that support;
- 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:

- Participation in guidance and counselling activities conducted at Institutional, District and State level;
- Adoption of innovative teaching and training methods;
- Improvement in result of vocational students of Class X or Class XII;
- Continuous up-gradation of knowledge and skills related to the vocational pedagogy, communication skills and vocational subject;
- Membership of professional society at District, State, Regional, National and International level;
- Development of teaching-learning materials in the subject area;
- Efforts made in developing linkages with the Industry/Establishments;
- Efforts made towards involving the local community in Vocational Education
- Publication of papers in National and International Journals;
- Organisation of activities for promotion of vocational subjects;
- Involvement in placement of students/student support services.

# 9. LIST OF CONTRIBUTORS

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