

INFORMATION TECHNOLOGY (SUBJECT CODE - 402)**CLASS – IX (Session 2023-2024)****Total Marks: 100 (Theory-50 + Practical-50)**

| | UNITS | NO. OF HOURS for Theory and Practical | | MAX. MARKS for Theory and Practical |
|---------------|---|--|------------------|--|
| Part A | Employability Skills | | | |
| | Unit 1 : Communication Skills-I | 10 | | 2 |
| | Unit 2 : Self-Management Skills-I | 10 | | 3 |
| | Unit 3 : ICT Skills-I | 10 | | 1 |
| | Unit 4 : Entrepreneurial Skills-I | 15 | | 3 |
| | Unit 5 : Green Skills-I | 05 | | 1 |
| | Total | | 50 | |
| Part B | Subject Specific Skills | Theory | Practical | Marks |
| | Unit 1: Introduction to IT- ITeS industry | 2 | 4 | 4 |
| | Unit 2: Data Entry & Keyboarding Skills | 4 | 10 | 6 |
| | Unit 3: Digital Documentation | 10 | 26 | 10 |
| | Unit 4: Electronic Spreadsheet | 18 | 35 | 10 |
| | Unit 5: Digital Presentation | 10 | 31 | 10 |
| | Total | 44 | 106 | |
| Part C | Practical Work | | | |
| | Practical Examination | | | 15 |
| | Written Test | | | 10 |
| | Viva Voce | | | 10 |
| | Total | | | |
| Part D | Project Work/ Field Visit | | | |
| | Practical File/ Student Portfolio | | | 10 |
| | Viva Voce | | | 05 |
| | Total | | | |
| | GRAND TOTAL | 200 | | 100 |

DETAILED CURRICULUM/TOPICS:

Part-A: EMPLOYABILITY SKILLS

| S. No. | Units | Duration in Hours |
|--------|---|-------------------|
| 1. | Unit 1: Communication Skills-I | 10 |
| 2. | Unit 2: Self-Management Skills-I | 10 |
| 3. | Unit 3: Basic Information and Communication Technology Skills-I | 10 |
| 4. | Unit 4: Entrepreneurial Skills-I | 15 |
| 5. | Unit 5: Green Skills-I | 05 |
| | TOTAL | 50 |

NOTE: Detailed Curriculum/ Topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

Part-B – SUBJECT SPECIFIC SKILLS

- Unit 1: Introduction to IT- ITeS industry
- Unit 2: Data Entry & Keyboarding Skills
- Unit 3: Digital Documentation
- Unit 4: Electronic Spreadsheet
- Unit 5: Digital Presentation

UNIT 1: INTRODUCTION TO IT–ITeS INDUSTRY

| S. No. | LEARNING OUTCOMES | THEORY | PRACTICAL |
|--------|-----------------------------------|--|--|
| 1 | Appreciate the applications of IT | <ul style="list-style-type: none">• Introduction to IT and ITeS, BPO services,• BPM industry in India,• Structure of the IT-BPM industry,• 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 | <ul style="list-style-type: none">- Identify and list the various IT enabled services, Observe the application of IT in various areas. |

UNIT 2: DATA ENTRY AND KEYBOARDING SKILLS

| S. No. | LEARNING OUTCOMES | THEORY | PRACTICAL |
|--------|---------------------------------------|---|--|
| 1. | Use keyboard and mouse for data entry | <ul style="list-style-type: none"> • Keyboarding Skills, • Types of keys on keyboard, Numeric keypad, • Home keys, Guide keys, • Typing and deleting text, • Typing ergonomics, • Positioning of fingers on the keyboard, Allocation of keys to fingers on four different rows, • Pointing device – Mouse, Mouse operations. | <ul style="list-style-type: none"> • Identify the keys and its use on the keyboard, • Demonstrate to use various keys on the keyboard, • Demonstrate to type the text, numbers, special character using appropriate keys on the keyboard, • Practice the correct typing ergonomics, • Practice to place fingers on correct key in four different row of keyboard, • Practice various mouse operations. |
| 2. | Use typing software | <ul style="list-style-type: none"> • Introduction to Rapid Typing Tutor, • Touch typing technique, • User interface of Typing Tutor, • Typing text and interpret results, • Working with lesson editor, • Calculating typing speed, • Typing rhythm. | <ul style="list-style-type: none"> • Identify the user interface of typing tutor, • Practice to type text in typing tutor software and interpret the results, • Practice to work in lesson editor, • Calculate the typing speed • Practice to improve typing • Using typing tutor software. |

UNIT 3: DIGITAL DOCUMENTATION

| S. No. | LEARNING OUTCOMES | THEORY | PRACTICAL |
|--------|--|---|--|
| 1. | Create a document using a word processor | <ul style="list-style-type: none"> • Introduction to word processing, • Word processing applications, • Introduction to Word Processing tool • Creating a document, Parts of a Word Processor Window, | <ul style="list-style-type: none"> • List the available word processing applications. • Introduce with the parts of the main window. • Change document views. • Start a new document. • Open an existing document. • Save a document. • Close a document. |
| 2. | Apply Editing features | <ul style="list-style-type: none"> • Text editing – Undo and Redo, • Moving and copying text, • Copy and Paste, • Selecting text, • Selection criteria, | <ul style="list-style-type: none"> • Editing of text in a document • Demonstrate to use undo and redo option, • Use the keyboard and mouse options to select, cut, copy, paste, and move text. |

| S. No. | LEARNING OUTCOMES | THEORY | PRACTICAL |
|--------|-----------------------------|--|--|
| | | <ul style="list-style-type: none"> • Selecting non-consecutive text items, • Selecting a vertical block of text, • Find and replace option, • Jumping to the page number, • Non-printing characters, • Checking spelling and grammar, • Using Synonyms and Thesaurus. | <ul style="list-style-type: none"> • Demonstrate to select nonconsecutive text items, vertical block of text, • Search and replace text in a document. • Jump to the given page number in a document, • Insert non-printing characters in a document, • Apply Spelling and grammar option of document. • Demonstrate to use Synonyms and Thesaurus. |
| 3. | Apply formatting features | <ul style="list-style-type: none"> • Page style dialog • Formatting text – Removing manual formatting, Common text formatting, Changing text case, Superscript and Subscript • Formatting paragraph – Indenting paragraphs, Aligning paragraphs, Font colour, highlighting, and background colour, Using bullets and numbering, Assigning colour, border and background to paragraph. • 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. | <ul style="list-style-type: none"> • Apply various text formatting options for the text, • Demonstrate to format paragraphs – indent/align paragraphs, assign font colour, highlighting, and background colour, • Assign number or bullets to the lists items • Demonstrate to assign colour, border and background to paragraph • 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. |
| 4. | Create and work with tables | <ul style="list-style-type: none"> • Creating table in Word Processor • Inserting row and column in a table • Deleting rows and columns • Splitting and merging tables • Deleting a table • Copying a table • Moving a table. | <ul style="list-style-type: none"> • Demonstrate and do the following in Word Processor: • Create table, • Insert and delete rows and column in a table, • Split and merge tables, • Delete a table, • Copy or move from one location to another location of document. |

| S. No. | LEARNING OUTCOMES | THEORY | PRACTICAL |
|--------|---------------------------------|--|---|
| 5. | Use Print Options | <ul style="list-style-type: none"> • Printing options in Word Processor. • Print preview, • Controlling printing, • Printing all pages, single and multiple pages. | <ul style="list-style-type: none"> • Demonstrate to print the document, selected pages in the document • Print the document with various options, • Preview pages before printing. |
| 6. | Understand and apply mail merge | <ul style="list-style-type: none"> • Introduction to mail merge • Concept of data source for mail merge. | <ul style="list-style-type: none"> • Demonstrate to print the letters using mail merge, • Do the following to achieve • Create a main document, • Create the data source, • Enter data in the fields, • Merge the data source with main document, • Edit individual document, • Print the merged letter, • Save the merged letter. |

UNIT 4: ELECTRONIC SPREADSHEET

| S. No. | LEARNING OUTCOMES | THEORY | PRACTICAL |
|--------|--|--|--|
| 1. | Create a Spreadsheet | <ul style="list-style-type: none"> • Introduction to spreadsheet application • Starting a spreadsheet • Parts of a spreadsheet • Worksheet – Rows and Columns, Cell and Cell Address, • Range of cells – column range, row range, row and column range. | <ul style="list-style-type: none"> • Start the spreadsheet, • Identify the parts of Calc, • Identify the rows number, column number, cell address, • Define the range of cell, • Identify row range, column range, row & column range |
| 2. | Apply formula and functions in spreadsheet | <ul style="list-style-type: none"> • Different types of data, • Entering data – Label, Values, Formula • Formula, how to enter formula, • Mathematical operators used in formulae, • Simple calculations using values and operators, • Formulae with cell addresses and operators, • Commonly used basic functions in a spreadsheet – SUM, AVERAGE, MAX, MIN, Count • Use of functions to do calculations. | <ul style="list-style-type: none"> • Demonstrate to enter the text, numeric data in a cell, • Identify the label, values and formula in the cell, • Demonstrate to enter formula in a cell, • Construct the formula using mathematical operators, • Identify formulae with cell addresses and operators, • Identify the correct syntax of formula, • Use the basic functions to perform calculations on data. |

| S. No. | LEARNING OUTCOMES | THEORY | PRACTICAL |
|--------|--|---|--|
| 3. | Format data in the spreadsheet | <ul style="list-style-type: none"> • Formatting tool, • Use of dialog boxes to format values, • Formatting a range of cells with decimal places, • Formatting a range of cells to be seen as labels, • Formatting of a cell range as scientific, • Formatting a range of cells to display times, • Formatting alignment of a cell range, • Speeding up data entry using the fill handle, • Uses of fill handle to copy formulae. | <ul style="list-style-type: none"> • Identify the formatting tool, • Demonstrate to use of dialog boxes to format values, • Demonstrate to format range of cells with decimal places, • Demonstrate to format a range of cells to labels, • Demonstrate to format of a cell range as scientific, • Demonstrate to format a range of cells to display time, • Demonstrate to align cell data range, • Demonstrate to create number series using fill handle, • Copy formula by dragging the formula using fill handle. |
| 4. | Understand and apply Referencing | <ul style="list-style-type: none"> • Concept of referencing, • Relative referencing, • Mixed referencing, • Absolute referencing. | <ul style="list-style-type: none"> • Demonstrate to use Relative referencing in spreadsheet, • Demonstrate to use Mixed referencing in spreadsheet, • Demonstrate to use Absolute referencing in spreadsheet. |
| 5. | Create and insert different types of charts in a spreadsheet | <ul style="list-style-type: none"> • Importance of chart in spreadsheet • Types of chart | <ul style="list-style-type: none"> • Create different types of charts supported by a spreadsheet, • Illustrate the example of chart in a spreadsheet. |

UNIT 5: DIGITAL PRESENTATION

| S. No. | LEARNING OUTCOMES | THEORY | PRACTICAL |
|--------|--|--|--|
| 1. | Understand features of an effective presentation | <ul style="list-style-type: none"> • Concept of presentation, • Elements of presentation, • Characteristics of an effective presentation | <ul style="list-style-type: none"> • Identify and list the elements of presentation, • List the characteristics of an effective presentation. |
| 2. | Create a presentation | <ul style="list-style-type: none"> • Introduction to presentation software, • Opening a presentation software • Parts of presentation window, • Closing a presentation • Creating a presentation using template, • Selecting slide layout, • Saving a presentation, • Running a slide show, • Save a presentation in PDF, • Closing a presentation, • Using Help. | <ul style="list-style-type: none"> • Start the presentation application • various components of main Impress window • Observe the different workspace views. • Create a new presentation using wizard. • Run the presentation, • Save the presentation, • Close the presentation, • Demonstrate to use Help in presentation. |

| S. No. | LEARNING OUTCOMES | THEORY | PRACTICAL |
|--------|---|--|--|
| 3. | Work with slides | <ul style="list-style-type: none"> • Inserting a duplicate slide, • Inserting new slides, • Slide layout, • Copying and moving slides, • Deleting and renaming slides • Copying, moving and deleting contents of slide, • View a presentation, • Controlling the size of the view, • Workspace views – Normal, Outline, Notes, Slide sorter view. | <ul style="list-style-type: none"> • Demonstrate to insert a new slide and duplicate slide in a presentation, • Change the slide layout, • Demonstrate to copy and move slides in the presentation, • Demonstrate to copy, move and delete contents of the slide, • Demonstrate to view a presentation in different views. |
| 4. | Format text and apply animations | <ul style="list-style-type: none"> • Formatting toolbar, • Various formatting features, • Text alignment, • Bullets and numbering. • Custom Animation | <ul style="list-style-type: none"> • Identify and list the various options in formatting toolbar, • Apply the appropriate formatting option • Align the text in presentation, • Apply bullets and numbering to the list items in presentation. □ Apply Animation |
| 5. | Create and use tables | <ul style="list-style-type: none"> • Inserting tables in presentation, • Entering and editing data in a table, • Selecting a cell, row, column, table, • Adjusting column width and row height, • Table borders and background | <p>Demonstrate the following:</p> <ul style="list-style-type: none"> • Insert table in presentation, • Enter and edit data in a table, • Select a cell, row, column, table, • Adjust column width and row height, • Assign table borders and background. |
| 6. | Insert and format image in presentation | <ul style="list-style-type: none"> • Inserting an image from a file, • Inserting an image from the gallery, • Formatting images, • Moving images, • Resizing images, • Rotating images, • Formatting using the Image toolbar, • Drawing graphic objects – line, shapes, • Grouping and un-grouping objects | <ul style="list-style-type: none"> • Demonstrate to insert an image from file, gallery in presentation, • Apply formatting options to image in presentation, • Demonstrate to move, resize and rotate images, • Apply formatting options of Image toolbar, • Drawing line, shapes using graphic objects, <p>Demonstrate to group and ungroup objects.</p> |
| 7. | Work with slide master | <ul style="list-style-type: none"> • Slide masters, • Creating the slide masters, • Applying the slide masters to all slide, • Adding transitions. | <ul style="list-style-type: none"> • Create the slide masters, • Apply the slide masters to the presentation, • Add transitions to presentation. |

LIST OF EQUIPMENT/ MATERIALS:

The list given below is suggestive and an exhaustive list should be compiled by the teacher(s) teaching the subject. 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 |
|----------|--|----------|
| A | HARDWARE | |
| 1. | Computer with latest configuration or minimum Pentium Processor with minimum 2GB 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 |
| B | SOFTWARE | |
| 1. | Operating System Linux and Windows | |
| 2. | Anti-Virus Latest version | |
| 3. | Productivity Suite, Example –Libre Office | |
| C | 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 Almira - big size | 01 |
| 10. | Steel Almira- small size | 01 |

TEACHER’S/ TRAINER’S QUALIFICATIONS:

Qualification and other requirements for appointment of teachers/trainers for teaching this subject, on contractual basis should be decided by the State/ UT. The suggestive qualifications and minimum competencies for the 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. The suggested qualification is the minimum criteria. However higher qualifications will also be acceptable. | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> 18-37 years (as on Jan. 01 (year)) Age relaxation to be provided as per Govt. rules |

Teachers/Trainers form the backbone of Skill (Vocational) Education being imparted as an integral part of Rashtriya Madhyamik Shiksha *Abhiyan* (RMSA). They are directly involved in teaching of Skill (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 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 Teachers/ Trainers, Educational Qualifications, Industry Experience, and Certification/ Accreditation.

The State may engage Teachers/Trainers in schools approved under the component of scheme 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 organizations 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 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. 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 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 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 counseling 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;
- Organization of activities for promotion of vocational subjects;
- Involvement in placement of students/student support services.