SMART INDIAN SCHOOL

(UNDER THE AEGIS OF BHAVANS MIDDLE EAST)

(SENIOR SECTION)

X SKILL SUBJECTS
ANNUAL SYLLABUS

2022-23

(AS PER THE CBSE CURRICULUM)
RELEASED ON 21 APRIL 2022

CLASS : X

ARTIFICIAL INTELLIGENCE (SUBJECT CODE 417)

CLASS – X (SESSION 2022-2023)

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-II*	10	-
	Unit 2: Self-Management Skills-II	10	3
	Unit 3: ICT Skills-II	10	3
	Unit 4: Entrepreneurial Skills-II	15	4
	Unit 5: Green Skills-II*	05	-
	Total	**50**	**10**
PART B	**Subject Specific Skills**		**Marks**
	Introduction to Artificial Intelligence (AI)		10
	AI Project Cycle		10
	Natural Language Processing		10
	Evaluation		10
	Total		**40**
PART C	**Practical Work:** • Advance Python • Data Science • Computer Vision		
	Practical Examination		35
	Viva Voce		
	Total		**35**
PART D	**Project Work / Field Visit / Practical File / Student Portfolio**		15
	Viva Voce		
	Total		**15**
	GRAND TOTAL	**200**	**100**

Note: *** marked units are to be assessed through Internal Assessment/ Student Activities. They are not to be assessed in Theory Exams**

DETAILED CURRICULUM/TOPICS FOR CLASS X

Part-A: EMPLOYABILITY SKILLS

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

Note: *** marked units are to be assessed through Internal Assessment/ Student Activities. They are not to be assessed in Theory Exams**

The detailed curriculum/ topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

Part-B – SUBJECT SPECIFIC SKILLS

Units to be assessed in theory examinations:

- Introduction to Artificial Intelligence (AI)
- AI Project Cycle
- Natural Language Processing
- Evaluation

Units to be assessed through Practicals:

- Advance Python
- Data Science
- Computer Vision

DETAILS OF THE UNITS:

Units to be assessed in theory examinations:

UNIT	SUB-UNIT	SESSION / ACTIVITY / PRACTICAL
INTRODUCTION TO AI	Foundational concepts of AI	**Session**: What is Intelligence?
		Session: Decision Making. ● How do you make decisions? ● Make your choices!
		Session: what is Artificial Intelligence and what is not?
	Basics of AI: Let's Get Started	**Session**: Introduction to AI and related terminologies. ● Introducing AI, ML & DL. ● Introduction to AI Domains (Data, CV & NLP)

UNIT	SUB-UNIT	SESSION / ACTIVITY / PRACTICAL
		Session: Applications of AI – A look at Real-life AI implementations
		Session: AI Ethics
AI PROJECT CYCLE	Introduction	**Session:** Introduction to AI Project Cycle
	Problem Scoping	**Session:** Understanding Problem Scoping & Sustainable Development Goals
	Data Acquisition	**Session:** Simplifying Data Acquisition
	Data Exploration	**Session:** Visualising Data
	Modelling	**Session:** Introduction to modelling ● Introduction to Rule Based & Learning Based AI Approaches ● Introduction to Supervised Unsupervised & Reinforcement Learning Models ● Neural Networks
	Evaluation	**Session:** Evaluating the idea!
NATURAL LANGUAGE PROCESSING	Introduction	**Session:** Introduction to Natural Language Processing
		Session: NLP Applications
		Session: Revisiting AI Project Cycle
	Chatbots	**Activity:** Introduction to Chatbots
	Language Differences	**Session:** Human Language VS Computer Language
	Concepts of Natural Language Processing	**Hands-on:** Text processing ● Data Processing ● Bag of Words ● TFIDF ***(Optional)***** ● NLTK
EVALUATION	Introduction	**Session:** Introduction to Model Evaluation
	Confusion Matrix	**Session & Activity:** Confusion Matrix
	Evaluation Score Calculation	**Session:** Understanding Accuracy, Precision, Recall & F1 Score
		Activity: Practice Evaluation

*****NOTE: Optional components shall not be assessed. They are for extra knowledge***

Units to be assessed through Practicals:

UNIT	SUB-UNIT	SESSION / ACTIVITY / PRACTICAL
ADVANCE PYTHON (To be assessed through Practicals)	Recap	**Session:** Jupyter Notebook
		Session: Introduction to Python
		Session: Python Basics
DATA SCIENCES (To be assessed through Practicals)	Introduction	**Session:** Introduction to Data Science
		Session: Applications of Data Science

UNIT	SUB-UNIT	SESSION / ACTIVITY / PRACTICAL
		Session: Revisiting AI Project Cycle
	Concepts of Data Sciences	**Session**: Python for Data Sciences
		Session: Statistical Learning & Data Visualisation
	K-nearest neighbour model ***(Optional)*****	**Activity:** Personality Prediction ***(Optional)*****
		Session: Understanding K-nearest neighbour model ***(Optional)*****
COMPUTER VISION (To be assessed through Practicals)	Introduction	**Session:** Introduction to Computer Vision
		Session: Applications of CV
	Concepts of Computer Vision	**Session & Activity:** Understanding CV Concepts • Pixels • How do computers see images? • Image Features
	OpenCV	**Session:** Introduction to OpenCV
		Hands-on: Image Processing
	Convolution Operator ***(Optional)*****	**Session:** Understanding Convolution operator ***(Optional)*****
		Activity: Convolution Operator ***(Optional)*****
	Convolution Neural Network ***(Optional)*****	**Session:** Introduction to CNN ***(Optional)*****
		Session: Understanding CNN ***(Optional)***** • Kernel • Layers of CNN
		Activity: Testing CNN ***(Optional)*****

*** NOTE: To be assessed through Practicals only and should not be assessed with the Theory Exam.**

*****NOTE: Optional components shall not be assessed. They are for extra knowledge***

LIST OF ITEMS/ EQUIPMENTS (MINIMUM REQUIREMENTS):

The equipment / materials listed below are required to conduct effective hands-on learning sessions while delivering the AI curriculum to class 10 students. The list below consists of minimal configuration required to execute the AI curriculum for class 10 and create social impact real time solutions/ projects. The quantities mentioned here are recommended for a batch of 20 students keeping the human-machine ratio as 2:1. An exhaustive list may be compiled by the teacher(s) teaching the subject.

S. NO.	ITEM NAME, DESCRIPTION & SPECIFICATION
A	**SYSTEM SPECIFICATIONS**
1	Processor: Intel® Core™ i5-7300U Processor or equivalent with minimum SYSmark® 2018 Rating of 750 or higher
2	Graphic Card: Integrated graphics
3	Form Factor: - USFF (Ultra Small Form factor) System chassis volume less than One Litre
4	RAM: 8GB DDR4 – 2400MHz or above
5	Storage: 500 GB HDD – 7200 rpm

S. NO.	ITEM NAME, DESCRIPTION & SPECIFICATION
6	Display: 18.5" LED Monitor with HDMI, in-built-speaker,
7	Keyboard: Keyboard with numerical keypad (recommended)
8	Mouse: Optical Mouse
9	Webcam: Full HD Camera
10	Headphones with Mic
11	Dual Band Wireless Connectivity Min 800 Mbps
12	Bluetooth V4.2 or Higher
13	Ports: 4 USB 3.0 ports, dual high-definition display ports (HDMI 2.0/DP/thunderbolt 3.0 ports), High definition 8-channel audio through HDMI interface or through audio jack.
14	VPU: - Integrated or support for VPU - vision processing unit to accelerate AI machine vision applications.
B	**SOFTWARE SPECIFICATIONS**
1	Operating System: Any
2	Anti-Virus Activated
3	Internet Browser: Google Chrome
4	Productivity Suite: Any (Google+ Suite recommended)
5	Anaconda Navigator Distribution (https://bit.ly/AI-installation-guide)
6	Conceptual installations (https://bit.ly/AI-installation-guide)
7	Intel OpenVINO tools
8	Python

NOTE: In keeping with the spirit of Recycle, Upcycle and Reuse, it is recommended to make use of any equipment/ devices/ accessories from the existing inventory in school.

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's Degree in Computer Applications/ 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.*	• 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)) • 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 Headmaster/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, teamwork, 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;
- Organisation of activities for promotion of vocational subjects;
- Involvement in placement of students/student support services.

CBSE | DEPARTMENT OF SKILL EDUCATION
CURRICULUM FOR SESSION 2022-2023

INFORMATION TECHNOLOGY (SUBJECT CODE – 402)

JOB ROLE: DOMESTIC DATA ENTRY OPERATOR

CLASS – X

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 the 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 OBJECTIVES:

In this course, the students will be introduced to the fundamental concepts of digital documentation, digital spreadsheet, digital presentation, database management and internet security.

The following are the main objectives of this course:

- To familiarize the students with the world of IT and IT enabled services.
- To provide in-depth training in use of data entry, internet and internet tools.
- To develop practical knowledge of digital documentation, spreadsheets and presentation.
- To enable the students to understand database management systems and have updated knowledge about digital record keeping.
- To make the students capable of getting employment in Private Sector, Public Sector, Ministries, Courts, House of Parliament and State Legislative Assemblies.
- To develop the following skills:
  - Data Entry and Keyboarding skills
  - The concept of Digital Documentation
  - The concept of Digital Presentation
  - The concept of Electronic Spreadsheet
  - The concept of Databases
  - Internet Technologies

SALIENT FEATURES:

To be a data entry operator/analyst, one requires a lot of hard work and practical hands-on experience. One should have an intensive knowledge of Office applications, computer operations, and knowledge of clerical, administrative techniques and data analysis. Along with this, as a data entry operator/analyst, you will be expected to have fast typing speed, accuracy, and efficiency to perform tasks.

As a data entry operator/analyst, one should improve their computer skills, numerical and literacy skills. These skills can help one expand into a new career path in the future

SCHEME OF UNITS

Total Marks: 100 (Theory-50+Practical-50)

This course is a planned sequence of instructions consisting of units meant for developing employability and vocational competencies of students of Class X opting for skill subject along with other subjects.

The unit-wise distribution of hours and marks for class X is as follows:

INFORMATION TECHNOLOGY (Subject Code 402)
Class X (Session 2022-2023)

	UNITS	NO. OF HOURS for Theory and Practical 200		MAX. MARKS for Theory and Practical 100
Part A	**Employability Skills**			
	Unit 1: Communication Skills-II*	10		-
	Unit 2: Self-Management Skills-II	10		3
	Unit 3: ICT Skills-II	10		3
	Unit 4: Entrepreneurial Skills-II	15		4
	Unit 5: Green Skills-II*	05		-
	Total	**50**		**10**
Part B	**SUBJECT SPECIFIC SKILLS**	**Theory (In Hours)**	**Practicals (In Hours)**	**Marks**
	Unit 1: Digital Documentation (Advanced)	12	18	8
	Unit 2: Electronic Spreadsheet (Advanced)	15	23	10
	Unit 3: Database Management System	18	27	12
	Unit 4: Web Applications and Security	15	22	10
	Total	**60**	**90**	**40**
Part C	**PRACTICAL WORK**			
	Practical Examination			20
	• Advanced Documentation	5 Marks		
	• Advanced Spreadsheets	5 Marks		
	• Databases	10 Marks		
	• Viva Voce	10 Marks		10
	Total			**30**
Part D	**PROJECT WORK/FIELD VISIT** Any Interdisciplinary Real World Case Study to be taken. Summarized data reports of same can be presented in base. Input should be taken using forms and output should be done using reports using base. Documentation of the case study should be presented using writer.			10
	PORTFOLIO/ PRACTICAL FILE: (Portfolio should contain printouts of the practical done using Writer, Calc and Base with minimum 5 problems of each)			10
	Total			**20**
	GRAND TOTAL	**200**		**100**

Note: *** marked units are to be assessed through Internal Assessment/ Student Activities. They are not to be assessed in Theory Exams**

DETAILED CURRICULUM/ TOPICS:

Part-A: EMPLOYABILITY SKILLS

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

Note: *** marked units are to be assessed through Internal Assessment/ Student Activities. They are not to be assessed in Theory Exams**

The detailed curriculum/ topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

Part-B – SUBJECT SPECIFIC SKILLS

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

Note: *** marked units are to be assessed through Internal Assessment/ Student Activities. They are not to be assessed in Theory Exams**

The detailed curriculum/ topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

UNIT 1: DIGITAL DOCUMENTATION (ADVANCED)			
S. No.	**LEARNING OUTCOMES**	**THEORY**	**PRACTICAL**
1.	Create and Apply Styles in the document	• Styles/ categories in Word Processor • Using the Styles and Formatting window.* • Using Fill Format.* • Creating and updating new style from selection • Load style from template or another document. • Creating a new style using drag-and-drop.* • Applying styles.	• List style categories. Select the style from the Styles and Formatting window. • Use Fill Format to apply a style to many different areas quickly. • Create and update a new style from a selection. • Load a style from a template or another document. • Create a new style using drag-and drop.
S. No.	**LEARNING OUTCOMES**	**THEORY**	**PRACTICAL**
2.	Insert and use images in document	• Options to insert image to document from various sources. • Options to modify, resize, crop and delete an image. • Creating drawing objects, setting or changing its properties. Resizing and grouping drawing objects. • Positioning image in the text.	• Insert an image to document from various sources. • Modify, resize, crop and delete an image. • Create drawing objects • Set or change the properties of a drawing object • Resize and group drawing objects • Position the image in the text
3.	Create and use template	• Templates. • Using predefined templates. • Creating a template.* • Set up a custom template as the default.. • Editing a template • Changing to a different template. • Updating a Document*	• Create a template. • Use predefined templates. • Set up a custom default template. • Update a document. • Change to a different template. • Use the Template. • Update the document and save the changes.
4.	Create and customize table of contents	• Table of contents. Hierarchy of headings. Customization of table of contents. • Character styles. Maintaining a table of contents.	• Create a table of contents. Define a hierarchy of headings. • Customize a table of contents. • Apply character styles. Maintain a table of contents.

5	Implement Mail Merge	• Advance concept of mail merge in word processing, • Creating a main document, • Creating the data source, • Entering data in the fields, • Merging the data source with main document, • Editing individual documents.* • Printing a letter and its address label	• Demonstrate to print the label 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 letter and address label

(Note: * To be assessed in Practicals only. No question shall be asked from this portion in Theory Exams)

UNIT 2: ELECTRONIC SPREADSHEET (ADVANCED)			
S. No.	**LEARNING OUTCOMES**	**THEORY**	**PRACTICAL**
1.	Analyse data using scenarios and goal seek.	• Using consolidating data. Creating subtotals. • Using "what if" scenarios. Using "what if" tools • Using goal seek and solver.	• Use consolidating data Create subtotals • Use "what if" scenarios Use "what if" tools • Use goal seek and solver

2.	Link data and spreadsheets	• Setting up multiple sheets. Creating reference to other sheets by using keyboard and mouse.
		• Creating reference to other document by using keyboard and mouse.*
		• Relative and absolute hyperlinks
		• Hyperlinks to the sheet.
		  ○ Linking to external data.
		  ○ Linking to registered data sources.
			• Setup multiple sheets by inserting new sheets.
			• Create reference to other sheets by using keyboard and mouse.
			• Create references to other documents by using keyboard and mouse.
			• Create, Edit and Remove hyperlinks to the sheet.
			• Link to external data.
			• Link to registered data source.

3.	Share and review a spreadsheet	• Setting up a spreadsheet for sharing.* • Opening and saving a shared spreadsheet. Recording changes. • Add, Edit and Format the comments. • Reviewing changes – view, accept or reject changes. Merging and comparing.	• Set up a spreadsheet for sharing. • Open and save a shared spreadsheet. • Record changes. • Add, Edit and Format the comments. • Review changes – view, accept or reject changes. • Merge and compare sheets.
4.	Create and Use Macros in spreadsheet	• Using the macro recorder. Creating a simple macro. Using a macro as a function. Using a macro as a function. • Discuss Passing arguments to a macro. • Discuss Passing the arguments' area values. • Discuss Macros to work like built-in functions. • Accessing cells directly. • Sorting the columns using macro.	• Demonstrate the use of a macro recorder. • Create a simple macro. • Use a macro • Access cells directly • Using a macro. • Sort the columns using macro.

(Note: * To be assessed in Practicals only. No question shall be asked from this portion in Theory Exams)

UNIT 3: DATABASE MANAGEMENT SYSTEM			
S. No.	**LEARNING OUTCOMES**	**THEORY**	**PRACTICAL**
1.	Appreciate the concept of Database Management System	• Concept and examples of data and information, • Concept of database, • Advantages of database, • Features of database, • Concept and examples of Relational database, • Concept and examples of field, record, table, database, • Concept and examples of Primary key, composite primary key, foreign key, • Relational Data base management system (RDBMS) software.	• Identify the data and information, • Identify the field, record, table in the database, • Prepare the sample table with some standard fields. • Assign the primary key to the field, • Identify the primary key, composite primary key, foreign key.
2.	Create and edit tables using wizard and SQL commands	• Introduction to a RDBMS • Database objects – tables, queries, forms, and reports of the database, • Terms in database – table, field, record, • Steps to create a table using table wizard* • Data types in database., • Option to set primary key Table Data View dialog box	• Start the RDBMS and observe the parts of main window, • Identify the data base objects Create the sample table in any category using wizard, Practice to create different tables from the available list and choosing fields from the available fields. • Assign data types of field, Set primary key, • Edit the table in design view, Enter the data in the fields. • Create and edit table using DDL Commands
3.	Perform operations on table	• Inserting data in the table, • Editing records in the table, • Deleting records from the table, • Sorting data in the table, Referential integrity, • Creating and editing relationships – one to one, one to many, many to many • Field properties(default, required and format)	Demonstrate to: • Insert data in the table, Edit records in the table, Delete records from table, Sort data in the table, • Create and edit relationships • one to one, one to many, many to many, • Enter various field properties.

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
4.	Retrieve data using query	• Database query, • Defining query, • Query creation using wizard,* • Creation of query using design view,* • Editing a query, • Applying criteria in query – single field, multiple fields, using wildcard, • Performing calculations, • Grouping of data, • Structured Query Language (SQL). • Introduction to DDL (purpose of- Create database, Create table, Alter table and Drop table)	• Prepare a query for given criteria, • Demonstrate to create query using wizard, and using design view, • Edit a query, • Demonstrate to apply various criteria in query – single field, multiple fields, using wild card, • Performing calculations using query in Base, • Demonstrate to group data, • Use basic SQL commands,
5.	Create Forms and Reports using wizard	• Introduction to Forms in DBMS.. • Creating form using wizard,* • Steps to create form using Form Wizard, * • Options to enter or remove data from forms • Modifying form, • Changing label, background, • Searching record using Form, • Inserting and deleting record using Form View, • Concept of Report in Base, • Creating Report using wizard, * • Steps to create a Report using Wizard. * • Insert date and time	• Illustrate the various steps to create Form using Form Wizard, • Enter or remove data from Forms, • Demonstrate to modify Forms, • Demonstrate to change label, background, • Search record using Form, • Insert and delete record using Form View, • Illustrate the various steps to create Report using Report Wizard, • Demonstrate various examples of Report.

(Note: * To be assessed in Practicals only. No question shall be asked from this portion in Theory Exams)

UNIT 4: WEB APPLICATIONS AND SECURITY			
S. No.	**LEARNING OUTCOMES**	**THEORY**	**PRACTICAL**
1.	Working with Accessibility Options.	• Understand various types of impairment that impact computer usage • Computer Accessibility Dialog box and its tabs • Serial Keys	• Illustrate use of various options under Computer Accessibility like Keyboard, mouse, sound, display setting serial keys, cursor options • use of toggle keys, filter keys, sticky keys, sound sentry, show sounds etc.
2.	Understand Networking Fundamentals	• Network and its types. • Client Server Architecture, Peer to-peer (P2P) Architecture, • internet, World Wide Web, • benefits of networking • internet, getting access to internet, • internet terminology • Some of the commonly used Internet connectivity options • Data transfer on the Internet	• Identify applications of Internet • comparing various internet technologies • identifying types of networks and selecting internet
3.	Introduction to Instant Messaging	• learn key features of instant messaging • Creating an instant messaging account • Launching Google Talk* • Signing in into your Google Talk Account*	• Illustrate steps to create instant messaging account • Signing In into your Google Talk Account
4.	Chatting with a Contact – Google Talk	• learn to chat with a contact that is already added to your contact list. • sending text chat messages instantly by double-clicking on a contact. • general rules and etiquettes to be followed while chatting. • chatting on various types of messengers	• Illustrate chat with a contact and send messages, • chatting with various messenger services
5	Creating and Publishing Web Pages – Blog …-	• learn and appreciate a blog and its creation with the help of some blog providers* • set up title and other parameters in a blog posting comments • using offline blog editors	• Illustrate Blog Creation and setting various parameters in it

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
6	Using Offline Blog Editors	• Concept to create blogs using a blog application and publish the blog whenever internet connectivity is available.	• Demonstration on how to create blogs using a blog application offline. • posting messages in an offline application • Publish the blog whenever internet connectivity is available using various examples
7	Online Transaction	• concept of e-commerce and various online applications • importance of secure passwords	• Illustration of online shopping using various ecommerce sites • Demonstration of securing passwords for online transactions.
8.	Internet Security	• Need of internet security • Cyber threats like phishing, email-spoofing, char spoofing etc. • best practices for internet security and secure passwords • concept of browser, cookies, backup, antivirus • clearing data in browsers	• illustration of internet security threats through various ways • cyber security tips • tips for secure passwords • demonstration of strong passwords using various websites. • clearing data stored in browser applications.
9.	Maintain workplace safety	• Basic safety rules to follow at workplace – Fire safety, • Falls and slips, Electrical safety, Use of first aid. • Case Studies of hazardous situations.	• 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.
10.	Prevent Accidents and Emergencies	• Accidents and emergency, • Types of Accidents, • Handling Accidents • Types of Emergencies.	• Illustrate to handle accidents at workplace, • Demonstrate to follow evacuation plan and procedure in case of an emergency.
11.	Protect Health and Safety at work	• Hazards and sources of hazards, • General evacuation procedures, • Healthy living.	• Identify hazards and sources of hazards, • identify the problems at workplace that could cause accidents, • Practice the general evacuation procedures in case of an emergency.

(Note: * To be assessed in Practicals only. No question shall be asked from this portion in Theory Exams)

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. Man power engaged.
6. Total expenditure of Data Entry Centre.
7. Total annual income.
8. Profit/Loss (Annual).
9. Any other information.

LIST OF EQUIPMENT/ MATERIALS:

The list given below is suggestive and an exhaustive list should be compiled from the feedback given by various by the teachers 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 – Open Office, etc.	

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.	• 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)) • 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;
- Organisation of activities for promotion of vocational subjects; Involvement in placement of students/student support services.

CAREER OPPORTUNITIES:

The job of a data entry operator/ analyst is to work for a wide variety of public and private organisations. A data entry operator/analyst is responsible to input data in a quick and efficient manner, create data storage and should possess knowledge about the methods for recovering useful data when needed, organizing and analyzing data in a clear and effective way, navigating computer and database systems proficiently, editing and preparing reports based on the information they have put into the system. They also help the organisations to keep up with recording and analyzing the abundance of information received on a daily basis.

Some of the top sectors that require a data entry operator/analyst are listed below:

- Banks and Public Sector
- Marketing Companies
- Accounting Companies
- Human Resources
- Corporate Businesses
- MNCs
- Study Centers
- Schools and Universities
- Hospitals or Healthcare Service Providers
- Insurance Firms
- Small-scale Businesses

VERTICAL MOBILITY

- Students can pursue Polytechnic/Diploma/Certificate courses in IT fields.
- Can work as DEO
- Data Entry/Analysis work from home for different companies

PHYSICAL ACTIVITY TRAINER (SUBJECT CODE - 418)

CLASS – X (SESSION 2022-2023)

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-II*	13		-
	Unit 2: Self-management Skills-II	7		3
	Unit 3: Information and Communication Technology Skills-II	13		3
	Unit 4: Entrepreneurial Skills-II	10		4
	Unit 5: Green Skills-II*	7		-
	Total	**50**		**10**
Part B	**Subject Specific Skills**	**Theory**	**Practical**	**Total**
	Unit 1: Roles and Responsibilities of Early Years Physical Activity Facilitator	16	16	40
	Unit 2: Assessment and Evaluation of Students	11	21	
	Unit 3: Free-play	15	24	
	Unit 4: Monitoring and Inventory Management	15	32	
	Total	**57**	**93**	**40**
Part C	**Practical Work**			
	Practical Examination			15
	Written Test			10
	Viva Voce			10
	Total			**35**
Part D	**Project Work/Field Visit**			
	Practical File/ Student Portfolio			10
	Viva Voce			05
	Total			**15**
	Total	**200**		**100**

Note: *** marked units are to be assessed through Internal Assessment/ Student Activities. They are not to be assessed in Theory Exams**

DETAILED CURRICULUM/TOPICS FOR CLASS X

Part-A: EMPLOYABILITY SKILLS

S. No.	Units	Duration in Hours
1.	Unit 1: Communication Skills-II*	13
2.	Unit 2: Self-management Skills-II	7
3.	Unit 3: Information and Communication Technology Skills-II	13
4.	Unit 4: Entrepreneurial Skills-II	10
5.	Unit 5: Green Skills-II*	7
	TOTAL DURATION	**50**

Note: *** marked units are to be assessed through Internal Assessment/ Student Activities. They are not to be assessed in Theory Exams**

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

Part-B – SUBJECT SPECIFIC SKILLS

- Unit 1: Role and Functions of Early Years Physical Activity Facilitator
- Unit 2: Assessment and Evaluation of Students
- Unit 3: Free-play
- Unit 4: Monitoring and Inventory Management

UNIT 1: ROLES AND RESPONSIBILITIES OF EARLY YEARS PHYSICAL ACTIVITY FACILITATOR

LEARNING OUTCOME	THEORY	PRACTICAL
1. Identify roles and responsibilities of a physical activity facilitator	1. Job description of an earlyyears physical activity facilitator 2. Qualities of a goodteacher	1. Discussion on the methods of discipline inculcation in students 2. Group discussion on pros and cons of mass drill 3. Discussion on the importance of talent identification in sports.
2. Describe the various activities to be conducted by the physical activity facilitator	1. Conducting basketball and volleyball skill development sessions 2. Altering the programs to meet the participant turn out and skill level. 3. Arranging facilities and equipment for performing risk management checks on the	

	facility. 4. Dealing with customers and answering questions. 5. Established rules and regulations and etiquetteguidelines 6. Ensuring the completion of all administrative paperwork activity plans, and participant feedback. 7. Responding to situations requiring conflict resolutionand emergency incidents, including first aid or CPR.	

UNIT 2: ASSESSMENT AND EVALUATION OF STUDENTS

LEARNING OUTCOME	THEORY	PRACTICAL
1. Describe the various types and tools of assessment	1. Meaning of assessment and evaluation 2. Diagnostic assessment 3. Skill assessment 4. Assessment tools and processes	1. Prepare a chart on difference between assessment and evaluation 2. Classroom discussion on which of the assessment is better formative or summative
2. Prepare assessment report and provide feedback	1. Preparation of report • Information identification • Analysis of report • Conclusion andrecommendation • Revise your report • Providing feedback 2. Steps of documenting feedback • Objectives of feedback	1. Slide presentation on steps of report preparation and feedback

UNIT 3: FREE-PLAY

LEARNING OUTCOME	THEORY	PRACTICAL
1. Describe the importance and purpose of free-play	1. Free play 2. Components of free play 3. Importance of free play in student's life 4. Factors influencing recreational activities	1. Write a paragraph on importance of free play students life 2. Make a chart of factors influencing free play
2. Organize Free-play activities	1. Objective of activity 2. Selection of suitable free play activity 3. Categorization and deviation of groups 4. Area selection 5. Equipment selection 6. Organization of free play activities	1. Group discussion on importance of categorization and grouping in recreational activities 2. Prepare a speech on equipment selection in free play activity
3. Demonstrate the knowledge of rehabilitation through free-play	1. Role of free-play in rehabilitation 2. Heterogeneous to homogeneous group 3. Selection of suitable free play activity 4. Session timing and time table 5. Recording data ofeach session	1. Prepare a pie chart on rehabilitation through free play

UNIT 4: MONITORING AND INVENTORY MANAGEMENT

LEARNING OUTCOME	THEORY	PRACTICAL
1. Describe the process of inventory management	1. Importance of periodic inventory check 2. Process of maintaining inventory	1. Write a paragraph about importance of listing the equipment 2. Prepare a flowchart on the steps of Listing the equipment
2. Manage props and equipment	1. Report of listed equipment 2. Estimation of fund for new equipment 3. Estimation of money for repairing of equipment 4. Monetary report of equipment purchased and repaired	1. Prepare a report of equipment in school sports store room 2. Prepare a report of sports equipment

LIST OF EQUIPMENT AND SUPPORT MATERIAL:

The tools, equipment and materials required for training are quite expensive, therefore; only basic tools, equipment and accessories should be procured by the Institution so that the routine tasks can be performed by the students regularly for practice and acquiring adequate practical experience. A set of weight plates, bars and other weights with one cable machine may be procured for training and regular field visits should be organized to provide opportunities to the students/trainees for observation and hands-on practice.

TEACHER'S/TRAINER'S QUALIFICATION AND GUIDELINES:

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

QUALIFICATION	MINIMUM COMPETENCIES	AGE LIMIT
Post-graduation in Physical Education from a recognized Institute /University, with at least 1 year work/ teaching experience	Effective communication skills (oral and written) Basic computing skills.	18-37 years (as on Jan. 01 (year). Age relaxation to be provided as per Govt. rules.

Vocational Teachers/Trainers form the backbone of Vocational Education being imparted as an integral part of *Samagra Shiksha*. They are directly involved in teaching of vocational subjects and also serve as a link between the industry and the schools for arranging industry visits, On-the- Job Training (OJT) and placement. These guidelines have been prepared with an aim to help and guide the States in engaging quality Vocational Teachers/Trainers in the schools. Various parameters that need to be looked into while engaging the Vocational Teachers/Trainers are modeand procedure of selection of Vocational Teachers/Trainers, Educational Qualifications, Industry Experience, and Certification/Accreditation. The State may engage Vocational Teachers/Trainers inschools approved under the component of Vocationalisation of Secondary and Higher Secondary Education under RMSA in the following ways:

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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:

a) Prepare session plans and deliver sessions which have a clear and relevant purpose and which engage the students;
b) Deliver education and training activities to students, based on the curriculum to achieve the learning outcomes;
c) Make effective use of learning aids and ICT tools during the classroom sessions;
d) 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;
e) Work with the institution's management to organize skill demonstrations, site visits, on- job trainings, and presentations for students in cooperation with industry, enterprises and other workplaces;
f) Identify the weaknesses of students and assist them in upgradation of competency;
g) Cater to different learning styles and level of ability of students;
h) Assess the learning needs and abilities, when working with students with different abilities
i) Identify any additional support the student may need and help to make special arrangements for that support;
j) Provide placement assistance

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

1. Participation in guidance and counselling activities conducted at Institutional, District and State level;

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

CAREER OPPORTUNITIES

Students who successfully complete their Vocational Training in Physical Education and Sports would be skilled to work as:

- Assistant to a Physical Education Teacher teaching age-appropriate physical activity in school
- Assistant to any coach teaching children age appropriate sports in a sports academy
- Member of a sports management team
- Assistant to venue operation manager in stadiums – groundmen, equipment manager, etc.
- As a referee, umpire at the district level tournaments
- Yoga Instructor, Fitness trainer in gyms by doing a short additional certification course

CAREER PROGRESSION AND HIGHER EDUCATION VERTICAL INTEGRATION OF THE COURSE:

SKILL COURSE
- (Early Years) Physical Activity Trainer (Instructor)
- NSQF Level 2 (CLASS IX - X)

SKILL COURSE
- (Primary Years) Physical Activity Trainer (Instructor)
- NSQF Level 4 (CLASS XI - XII)

BPED, MPED offered by UGC	•PGT/TGT - School •HOD Sports - School
MPED with NET	•Lecturer / Reader in college
MPED/MPHIL, PHD with NET	•Professor / Associate professor
PHD, SPORTS SCIENCE	•Exercise Scientist