



WEST BENGAL STATE COUNCIL OF TECHNICAL & VOCATIONAL EDUCATION AND SKILL DEVELOPMENT
(A Statutory Body under Government of West Bengal Act XXVI of 2013)
Department of Technical Education, Training & Skill Development, Government of West Bengal
Karigari Bhavan, 4th & 5th Floor, Plot No. B/7, Action Area-III, Newtown, Rajarhat, Kolkata-700 160

Memo No. SCTVSD-16015/3/2020-AO(WBSCTVESD)-Part(1): 589

Date: 29.09.2023

NOTIFICATION

Attention: All Heads of Institutions, running Higher Secondary (Vocational) Courses.

This is to inform that with effect from 2023-2024 academic session, i.e for those students who had taken admission in Class XI, certain changes have been incorporated in curriculum structure as given below:

- (1) Introduction of new group "IT Infrastructure and Application" under Engineering & Technology discipline in place of "Computer Maintenance (ETCM)" & "IT Application (ETIA)"
- (2) Introduction of new group "AI / ML" under Engineering & Technology discipline
- (3) Introduction of new group "Renewable Energy" under Engineering & Technology discipline
- (4) Introduction of Skill Certificate including relevant contents learnt in class XI & class XII (for ET & AG disciplines only) as core component and elective component respectively. For the purpose of awarding skill certificate, course content learnt in class XI will be assessed during class XI through External Assessor.
- (5) Modification of syllabus for Foundation course for "Refrigeration & Air-conditioning (ETRA)" Group and for "Automobile Technology (ETAT)" Group in class XI.
- (6) Modification of syllabus for Technical Drawing (class XI)
- (7) Modification of Entrepreneurship Development & Computer Application (EDCA).

Detail of above changes is being attached separately as Annexure with this notification.

Yours faithfully,


Chief Administrative Officer
(WBSCTVESD)

Memo No. SCTVSD-16015/3/2020-AO(WBSCTVESD)-Part(1): 589

Date: 29.09.2023

Copy to:

1. The Chairperson, WBSCT&VE&SD
2. Directorate of Vocational Education & Training, Govt. of West Bengal
3. Sr. Administrative Officer (VE), WBSCT&VE&SD
4. Sr. Administrative Officer (TE), WBSCT&VE&SD
5. All HOI / TIC of VTCs running Higher Secondary (Vocational) courses.


Chief Administrative Officer
(WBSCTVESD)

Annexure to Memo No. SCTVSD-16015/3/2020-AO(WBSCTVESD)-Part (1): 589 Date: 29.09.2023

The curriculum and syllabus of the Higher Secondary Vocational Course will include the following modifications starting from the Academic Year 2023-2024. This applies to students who enrolled in class XI in the year 2023.

[A] For Engineering & Technology (ET) Discipline only:

1. Following new Group of studies are being introduced:

- (i) New group name, "IT Infrastructure and Application," identified by the Group Code ETIT, is being introduced. This will serve as a replacement for both the existing groups, namely Computer Maintenance & Networking (ETCM) and IT Application (ETIA). The composition of this new group will be as follows:

Group Name (Code)	Paper 4 under Basic Vocational Group (Class XI) Basic Vocational Subject & Workshop Practice	Vocational Papers [Elective Module] (Class XII) (VTCs to choose minimum 2, maximum 3 to be known as VP1, VP2, VP3)	Skill Certificate Name
IT Infrastructure and Application (ETIT)	Foundation course on Computer Hardware & Security (FHWK) and Workshop Fundamentals (a)Basic Computer Hardware & Security Theory (b)Workshop Practice [House Wiring/Fitting / Welding/ Carpentry] [Any three from four]	1. Computer Maintenance & Networking 2. Web page Development 3. Database Management System 4. Visual Basic Programming 5. Python Programming Language	IT Infrastructure and Application Associate

Henceforth, starting from class XI of 2023-2024 Academic Sessions, the ETCM/ETIA groups will no longer be in existence. Content of "Foundation course on Computer Hardware & Security" is given in **Annexure A**.

- (ii)New group name, "Renewable Energy" identified by the Group Code ETRE, is being introduced.

Group Name (Code)	Paper 4 under Basic Vocational Group (Class XI) Basic Vocational Subject & Workshop Practice	Vocational Papers [Elective Module] (Class XII) (VTCs to choose minimum 2, maximum 3 to be known as VP1, VP2, VP3)	Skill Certificate Name
Renewable Energy (ETRE)	Foundation course on Electrical (a)Basic Electrical Theory (b)Workshop Practice [House Wiring/Fitting/Welding/Carpentry] [Any three from four]	1. Solar PV Installation & Maintenance 2. Solar Thermal Installation & Maintenance 3. Electric Vehicle (EV) Charging Station Operation and Maintenance 4. Electric Vehicle (EV) Battery Management System	Renewable Energy Integration Technician

(iii) New group name, "AI/ML" identified by the Group Code ETAM, is being introduced.

Group Name (Code)	Paper 4 under Basic Vocational Group (Class XI) Basic Vocational Subject & Workshop Practice	Vocational Papers [Elective Module] (Class XII) (VTCs to choose minimum 2, maximum 3 to be known as VP1, VP2, VP3)	Skill Certificate Name
AI / ML (ETAM)	Foundation course on AI/ML and Workshop Fundamentals (a) Introduction to AI/ML (b) Workshop Practice [House Wiring/Fitting/Welding/Carpentry] [Any three from four]	1. AI/ML Elective 1 2. AI/ML Elective 3 3. Programming Language	AI / ML Applications Technicians

Content of "Introduction to AI /ML" is given in **Annexure B**.

2. Following group wise changes, for class XI, in Paper no. 4 i.e. "Basic Vocational Subject & Workshop Practice" under "Basic Vocational Group" will be followed :

(A) For "Refrigeration & Air-conditioning" Group (ETRA), "Basic Vocational Subject & Workshop Practice" will be
Foundation course on Mechanical & Cooling system and Workshop Fundamentals (FMWK)

It will have following two components:

- (a) Basic Mechanical Theory & Cooling System
- (b) Workshop Practice [House Wiring/Fitting /Welding/Carpentry] [Any three from four]

Revised syllabus of "Basic Mechanical Theory & Cooling System" is given in **Annexure C**

(B) For "Automobile Technology" Group (ETAT), "Basic Vocational Subject & Workshop Practice" will be
Foundation course on Mechanical & Automobile (FAWK)

It will have following two components:

- (a) Basic Mechanical Theory & Automobile basics
- (b) Workshop Practice [House Wiring/Fitting /Welding/Carpentry] [Any three from four]

Revised syllabus of "Basic Mechanical Theory & Automobile basics" is given in **Annexure D**

3. Syllabus of Technical Drawing (which is a part of "Fundamental of Mechanics & Technical Drawing") is being revised with an added module on CAD as given below:

- (a) Introduction to CAD software
- (b) Common 2D command for drawing simple sketch:
 - Creation of work plane, Line, Circle, Rectangle, arc, Ellipse, curve, Move, Copy, Trim, Fillet, Chamfer, Extend, offset, Array, break.
 - Practice on 2D Drawing.

Proportionate time will be given by teachers out of total available classes to teach the above. All other component of the syllabus of "Fundamental of Mechanics & Technical Drawing" will remain unchanged.

4. Starting from the academic year 2023-2024, i.e. for students who have enrolled in class XI in the current academic year, a new concept of Skill Certificate will be introduced. The Skill Certificate earned after completing Higher Secondary (Vocational) education will include the following components:

(a) Mandatory foundation components (to be known as Core Modules) derived from the curriculum taught in class XI and relevant to the corresponding Vocational group.

(b) Elective component that will be taught during class XII, with a maximum of three options available, out of which two will be compulsory (currently referred to as VP1, VP2, & VP3).

The Skill Certificate will mention the combination of elective choices made by the student and the SumTotal of duration of both (a) and (b) as mentioned above.

The full Qualification Files for Skill Certificates will be notified at a later date.

The updated curriculum framework for the Engineering & Technology Discipline, which includes all the aforementioned modifications, can be found in **Annexure E**.

[B] For Agriculture (AG) Disciplines:

Each group will be identified with a single skill certificate. Name of group and choice of elective (vocational) Paper will remain unchanged. However each group will be given more elective choices for class XII to choose from. These extra choices will be notified later. Presently skill certificate (s) will be identified by the respective group name (s).

[C] For all Disciplines:

The syllabus for Entrepreneurship Development and Computer Application (EDCA) has been revised, and the updated syllabus can be seen in **Annexure F**.

ANNEXURE A**Foundation course on Computer Hardware & Security and Workshop Fundamentals
(FHWK)****Class XI**

Total no. Of weeks for classes / Year: 36		
Classes per week: 12	Th = 3	Workshop = 9
Total classes per year: 432	Th = 108	Workshop = 324
Total marks: 100	Th = 50	Workshop= 50

Basic Computer Hardware & Security Theory

Total no. of weeks for classes/Year : 36	
Classes per week:	3 (Th)
Total classes per year:	108
Total marks:	50

Course contents:**Theory:****Unit 1: Safety (5 classes)**

- Introduction to Safety Basics
 - Importance of safety in handling computer hardware
 - Specification and application of basic hand tools
- Component Handling and Longevity
 - Proper handling techniques to ensure component longevity
 - Avoiding electrostatic discharge (ESD)
 - Use of antistatic pads and anti-static wrist wraps
- Protection from External Threats

- Protecting a PC from lightning strikes
- Steps to safeguard against power outages and surges
- Use of surge protectors and uninterruptible power supplies (UPS)
- Practical Safety Demonstration
 - Hands-on demonstration of safety practices
 - Proper grounding and ESD precautions
 - Safely assembling and disassembling computer components

Unit 2: Introduction to Computer Hardware (25 classes)

- Overview of Computer Components
 - CPU, RAM, motherboard, and their functions
 - Secondary storage devices: HDDs, SSDs, optical drives
 - Input and output devices: keyboard, mouse, monitor, printer
- Computer Architecture and System Configurations
 - Basics of computer architecture
 - Understanding system configurations
 - Compatibility of hardware components
- Computer Assembly and Troubleshooting
 - Step-by-step guide to assembling a computer
 - Techniques for diagnosing and troubleshooting hardware issues
 - Common hardware problems and solutions

Unit 3: Operating Systems and Device Drivers (15 classes)

- Introduction to Operating Systems
 - Overview of Windows and Linux.
 - Role of operating systems in managing hardware
- Device Drivers and Hardware Communication
 - Understanding device drivers and their significance
 - Installation and configuration of device drivers

Unit 4: Networking Concepts (20 classes)

- Introduction to Computer Networks
 - Advantages of networking
 - Network topologies: star, ring, bus, tree, mesh, hybrid
- Types of Networks

- LAN, MAN, WAN definitions and differences
- Networking components: routers, switches, hubs, modems, etc.
- Network Technologies
 - Internet, Ethernet, Wi-Fi, Bluetooth, Mobile Networking
 - Wired and wireless networking
 - Introduction to network protocols: TCP/IP, HTTP, HTTPS
- Intranet, Internet, and Beyond
 - Difference between Intranet and Internet
 - Extranet and various generations of mobile networks (3G, 4G, 5G)

Unit 5: Computer Security Fundamentals (15 classes)

- Importance of Computer Security
 - Understanding the significance of computer security
 - Impact of cyber threats on individuals and organizations
- Malware Overview
 - Different types of malware: viruses, worms, trojans
 - Methods of malware propagation
- Authentication and Access Control
 - Basics of authentication mechanisms
 - Implementing access control measures
 - Introduction to security principles and best practices

Unit 6: Network Security Basics (28 classes)

- Introduction to Network Security
 - Key concepts in network security
 - Threats and vulnerabilities in networked environments
- Wi-Fi Security
 - Secure Wi-Fi setup and password management
 - Risks associated with public Wi-Fi networks
- Email Security and Safe Online Transactions
 - Recognizing suspicious emails and attachments
 - Secure online payment methods
- Cybersecurity Best Practices
 - Importance of regular software updates
 - Data backup and recovery basics

- Tips for safer online behaviour
- Introduction to Cyber Laws and Regulations
 - Overview of cyber laws and regulations
 - Legal aspects of cybersecurity

WBSCTVESD

ANNEXURE B**Foundation course on AI/ML and Workshop Fundamentals (FIWK)****Class XI**

Total no. Of weeks for classes / Year: 36		
Classes per week : 12	Th = 3	Workshop = 9
Total classes per year : 432	Th = 108	Workshop = 324
Total marks : 100	Th = 50	Workshop= 50

Introduction to AI/ML

Total no. of weeks for classes/Year : 36	
Classes per week :	3 (Th)
Total classes per year :	108
Total marks:	50

Detail course content: Introduction to AI/ML (for XI)

Module	Topic	Content	Classes (Total 108 classes)
Subject Objective: To build awareness of recent emerging Technologies for building fundamental knowledge on AI/ML.			
Module 1: Introduction to Python and AI	<u>Unit 1:</u> Introduction to Python	1.1.1 Features of Python and Its Significance in AI/ML 1.1.2 Introduction to Python as a versatile programming language. 1.1.3 Overview of the role of Python in AI and ML.	3

	<u>Unit 2:</u> Setting Up Python Development Environment	1.2.1 Installing Python (latest version) and Anaconda distribution. 1.2.2 Setting up Jupyter Notebook for interactive coding.	7
	<u>Unit 3:</u> Basic Python Syntax and Concepts	1.3.1 Variables, Identifiers data types (numbers(integer, float), Boolean, string, list, tuple, dictionary). 1.3.2 Operators (Arithmetic, Assignment, Unary, Relational(Comparison), Logical, Bitwise, Membership, Identity). 1.3.3 Input and output using input() and print(). 1.3.4 Type Conversion	8
	<u>Unit 4:</u> Writing and Executing Python Scripts	1.4.1 Creating and running Python scripts. 1.4.2 Understanding indentation and code blocks.	8
Module 2: Python Fundamentals	<u>Unit 1:</u> Control Structures	2.1.1 Decision Control Statements (if, else, elif, Nested If). 2.1.2 Loop Control Statements (for, while, Nested Loop). 2.1.3 Break, Continue and Pass statements. 2.1.4 else statement with Loop	8
	<u>Unit 2:</u> Functions and Modules	2.2.1 Functions Definition, Function Call, Function parameters and return Statements. 2.2.2 Organizing code into Modules. 2.2.3 The from...import statement. 2.2.4 Python built-in Modules and Namespaces	8
	<u>Unit 3:</u> Data Structures	2.3.1 Lists: Creating, indexing, slicing, and modifying. 2.3.2 Tuples: Understanding immutability. 2.3.3 Dictionaries: Key-value pairs. 2.3.4 Sets: Unique elements and set operations.	8

	<u>Unit 4:</u> File Handling in Python	2.4.1 Types of Files 2.4.2 Opening and closing Files 2.4.3 Reading and writing text files. 2.4.4 Handling exceptions with try-except blocks. 2.4.5 Context managers and the with statement.	10
Module 3: NumPy and Pandas	<u>Unit 1:</u> Introduction to NumPy	3.1.1 NumPy arrays: Creating, indexing, and slicing. 3.1.2 Performing numerical operations with arrays. 3.1.3 Basic statistics with NumPy.	10
	<u>Unit 2:</u> Exploring Pandas	3.2.1 Introduction to Pandas data structures: Series and Data Frame. 3.2.2 Data manipulation with Pandas. 3.2.3 Data cleaning and preprocessing using Pandas.	8
Module 4: Introduction to Machine Learning	<u>Unit 1:</u> Machine Learning Overview	4.1.1 Introduction to Artificial Intelligence, Definition of AI and its importance, Historical development, and milestones in AI Different types of AI systems (narrow AI vs. general AI), 4.1.2 Overview of Machine Learning and its types (supervised, unsupervised, reinforcement). 4.1.3 Neural Networks for Classification and Regression: Introduction to artificial neural networks (ANNs)	10
	<u>Unit 2:</u> Introduction to scikit-learn	4.2.1 Installing and importing scikit-learn. 4.2.2 Data preprocessing: Handling missing data, encoding categorical features. 4.2.3 Splitting data into training and testing sets.	10
	<u>Unit 3:</u> Implementing Basic ML Algorithms	4.3.1 Linear regression for regression problems. 4.3.2 K-means clustering for unsupervised learning. 4.3.3 Model evaluation metrics (e.g., R-squared, Mean Squared Error).	10

ANNEXURE C

Basic Mechanical Theory & Cooling System

Total no. of weeks for classes/Year :	36
Classes per week :	3 (Th)
Total classes per year :	108
Total marks:	50

Module A**1. Engineering Materials, their properties & Uses:****[8 pds]**

- Classification of steel according to percentage of carbon and their properties & uses, Properties & uses of cast iron, Properties and uses of copper, brass, tin, zinc, lead & aluminum
- Mechanical Properties: Ductility, Malleability, Hardness, Toughness, Elasticity, Plasticity and Brittleness.

2. Elements of Power Transmission: [10 pds]

- Nut & Screw, Key & Key way,
- Different types of Gears, Belts, Pulleys, Keys, Cams, Followers, Couplings & Bearings.
- Journal & bearing.
- Belt drives (open belt & cross belt only, Velocity Ratio considering belt thickness), Gear drives (Velocity Ratio of Simple gear train and compound gear train), Cam & follower mechanism (rise, fall & dwell for uniform velocity motion only)

3. Manufacturing Process: [18 pds]

- Principles of gas welding, arc welding, Equipment's required for gas welding and arc welding, Arc welding voltage and current, Electrodes for arc welding, Polarity of arc welding, Principles and uses of electric resistance welding (spot and seam only), Principles and uses of TIG welding & MIG welding, Difference between TIG welding & MIG welding.
- Fitting- different tools (vice, hammer, chisel, file, punch scriber, surface plate, v-block, try square

etc.) used for fitting work and their purpose; Specification of file; Purpose of using drill, reamer and tap. Tap drill size.

- Forging- materials, forging temperature, heating devices, tools required for forging operations, Examples of smith forging.
- Brief idea about Non Destructive Testing, Advantages, Types and their field of applications.

4. Measuring Instruments & Gauges:[10 pds]

- Definition, Difference between Measuring Instruments & Gauges, Example of Measuring Instruments & Gauges.
- Description & Least count of Micrometer, Procedure for taking measurement by using micrometer.
- Description & vernier constant of Vernier Calliper, Procedure for taking measurement by using Vernier Calliper.
- Uses of following gauges:
Ring Gauge, Plug Gauge, Snap Gauge, Thread Gauge, Screw Pitch Gauge, Feeler Gauge & Radius Gauge.

Module B

Mechanics of materials:

5. Stress & Strain: [24 pds]

- Definition of simple stress & strain & their Unit, Hook's Law, Definition of Young's Modulus, Elongation of a bar under tensile load, Stress in varying section. Simple related problems.

6. Shear Force & Bending Moment: [21 pds]

- Types of load, beam & support, Definition & concept of shear force and bending moment of beam, Idea of SF & BM diagrams of Cantilever & simply supported beam with point load, Idea of SF & BM diagrams of Cantilever & simply supported beam with uniformly distributed load.

Module C

7. Introduction to Cooling system [17 pds]

- Define Cooling system. Need of different cooling systems, refrigerator, air-conditioner, freezer
- Introduction to Heat Transfer principle.

- Definition of refrigerator, air-conditioner, freezer; difference between refrigerator and freezer
- Refrigerating effect, Coefficient of Performance (COP) , Capacity of Refrigeration, Refrigeration cycle.
- Labelled Flow diagram of Vapour Compression Refrigeration Cycle.
- Labelled Flow Diagram of Vapour Absorption Refrigeration System.
- Components of Single Door Refrigerator and Double Door Refrigerator.
- Different systems of Air Conditioning, such as-Summer Air conditioning system, Winter Air Conditioning system, Year-Round Air-Conditioning System
- Components of Window Air Conditioner and Split Air Conditioner.

ANNEXURE D**Basic Mechanical Theory & Automobile Basics**

Total no. of weeks for classes/Year :	36
Classes per week :	3 (Th)
Total classes per year :	108
Total marks:	50

Course Contents:**Module A****1. Engineering Materials, their properties & Uses: [8 pds]**

- Classification of steel according to percentage of carbon and their properties & uses, Properties & uses of cast iron, Properties and uses of copper, brass, tin, zinc, lead & aluminum
- Mechanical Properties: Ductility, Malleability, Hardness, Toughness, Elasticity, Plasticity and Brittleness.

2. Elements of Power Transmission: [10 pds]

- Nut & Screw, Key & Key way,
- Different types of Gears, Belts, Pulleys, Keys, Cams, Followers, Couplings & Bearings.
- Journal & bearing.
- Belt drives (open belt & cross belt only, Velocity Ratio considering belt thickness), Gear drives (Velocity Ratio of Simple gear train and compound gear train), Cam & follower mechanism (rise, fall & dwell for uniform velocity motion only)

3. Manufacturing Process: [18 pds]

- Principles of gas welding, arc welding, Equipment's required for gas welding and arc welding, Arc welding voltage and current, Electrodes for arc welding, Polarity of arc welding, Principles and uses of electric resistance welding (spot and seam only), Principles and uses of TIG welding & MIG welding, Difference between TIG welding & MIG welding.
- Fitting- different tools (vice, hammer, chisel, file, punch scribe, surface plate, v-block, try square etc.) used for fitting work and their purpose; Specification of file; Purpose of using drill, reamer

and tap. Tap drill size

- Forging- materials, forging temperature, heating devices, tools required for forging operations, Examples of smith forging.
- Brief idea about Non Destructive Testing, Advantages, Types and their field of applications.

4. Measuring Instruments & Gauges:[10 pds]

- Definition, Difference between Measuring Instruments & Gauges, Example of Measuring Instruments & Gauges.
- Description & Least count of Micrometer, Procedure for taking measurement by using micrometer.
- Description & vernier constant of Vernier Calliper, Procedure for taking measurement by using Vernier Calliper.
- Uses of following gauges:
Ring Gauge, Plug Gauge, Snap Gauge, Thread Gauge, Screw Pitch Gauge, Feeler Gauge & Radius Gauge.

Module B

Mechanics of materials:

5. Stress & Strain: [24 pds]

Definition of simple stress & strain & their Unit, Hook's Law, Definition of Young's Modulus, Elongation of a bar under tensile load, Stress in varying section. Simple related problems.

6.Shear Force & Bending Moment: [21 pds]

Types of load, beam & support, Definition & concept of shear force and bending moment of beam, Idea of SF & BM diagrams of Cantilever & simply supported beam with point load, Idea of SF & BM diagrams of Cantilever & simply supported beam with uniformly distributed load.

Module C

Introduction to Automobile System [17 pds]

7. Introduction:

7.1 What is an automobile?

Different types of automobiles (Cars, Buses, Trucks, motorcycles etc.)

7.2 Evolution of Automobiles

The history of automobiles: From horse-drawn carriages to modern vehicles.

Key milestones in the development of automobiles.

8. Automobile components

8.1 Chassis and Body

Understanding the chassis and its role.

Types of vehicle bodies (Hatchback, Sedan, SUV etc.)

8.2 Engine

Introduction to the engine as the heart of the automobile.

Different types of engines (petrol, diesel, electric, hybrid, CNG, LPG).

8.3 Transmission System

How gears and transmission work.

Manual vs. automatic transmissions.

9. Vehicle Control & Safety

9.1 Steering and Suspension

How steering and suspension systems affect vehicle control.

Importance of proper alignment.

9.2 Braking Systems

The role of brakes in stopping the vehicle.

Types of braking systems (disc brakes, drum brakes, ABS).

9.3 Safety Features

Overview of modern safety features (airbags, ABS, traction control).

Importance of seat belts and child safety seats.

10. Automobile Maintenance

10.1 Regular Maintenance

10.2 The importance of regular oil changes, tire air pressure checking and inspections.

11. Environmental Impact

11.1 Air Pollution

How automobiles contribute to air pollution.

Emission control technologies.

11.2 Fuel Efficiency

Tips for improving fuel efficiency and reducing carbon footprint.

Benefits of hybrid and electric vehicles.

ANNEXURE- E**Curriculum Structure For H.S. (10+2) Vocational Courses w.e.f. 2023-2024 Academic Year****Stream: Engineering & Technology [ET]****I. SCHEME OF STUDIES**

No. of periods per week*	Theory +Practical	44/41/42	No. of effective weeks per year	40
			No. of weeks for class	36
			No of weeks for exam	4
Duration of period **	Theory	40 min		
	Practical	40 min		

* 8 periods per day (Monday to Friday) x 5 =40 periods + 4 periods in each Saturday.

** Effective class duration: Monday to Friday – 5 hours 20min. per day, and Saturday - 2 hours 40 min.

II. COURSES, DISTRIBUTION OF MARKS AND CLASSES**CLASS-XI**

Group	Paper no.	Code	Subject	Distribution Of Marks				Distribution Of Classes / Week				Total yearly classes
				Theory	Practical	Project	Total	Theory	Practical/ Project/ Tutorial	Total		
Language	1	BEN1/ HIN1/ NEP1/ URD1	First Language: Bengali/Hindi/Nepali/Urdu	80		20	100	2	1	3	108	
	2	ENG1	Second Language: English	80		20	100	2	1	3	108	
Basic Vocational Group	3.	FMTD	Fundamentals of Mechanics & Technical Drawing a) Fundamentals of Mechanics b) Technical Drawing	50	50		100	3 1	1 3	8	288 (144+ 144)	
	4	Basic Vocational Subject & Workshop Practice <i>Students will choose any one amongst (i) to (vii) below (See Note 2 below)</i>										
	i)	FLWK	<u>Foundation course on Electronics and Workshop Fundamentals</u> (a)Basic Electronics Theory (b)Workshop Practice [House Wiring/Fitting /Welding/Carpentry] [Any three from four] \$	50	50		100	3	9	12	432 (108+ 324)	
	ii)	FEWK	<u>Foundation course on Electrical and Workshop Fundamentals</u> (a)Basic Electrical Theory (b)Workshop Practice [House Wiring/Fitting /Welding/Carpentry] [Any three from four] \$	50	50		100	3	9	12	432 (108+ 324)	

Group	Paper no.	Code	Subject	Distribution Of Marks				Distribution Of Classes / Week				Total yearly classes
				Theory	Practical	Project	Total	Theory	Practical/ Project/ Tutorial	Total		
Basic Vocational Group	iii)	FMWK	Foundation course on Mechanical & Cooling system and Workshop Fundamentals (a)Basic Mechanical Theory & Cooling System (b)Workshop Practice [House Wiring/Fitting /Welding/Carpentry] [Any three from four] \$	50	50		100	3	9	12	432 (108+324)	
	iv)	FAWK	Foundation course on Mechanical & Automobile and Workshop Fundamentals (a)Basic Mechanical Theory & Automobile Basics (b)Workshop Practice [House Wiring/Fitting /Welding/Carpentry] [Any three from four] \$	50	50		100	3	9	12	432 (108+324)	
	v)	FCWK	Foundation course on Civil and Workshop Fundamentals (a)Basic Civil Theory (b)Workshop Practice [House Wiring/Fitting /Welding/Carpentry] [Any three from four]	50	50		100	3	9	12	432 (108+324)	
	vi)	FHWK	Foundation course on Computer Hardware & Security and Workshop Fundamentals (a)Basic Computer Hardware & Security Theory (b)Workshop Practice [House Wiring/Fitting /Welding/Carpentry] [Any three from four] \$	50	50		100	3	9	12	432 (108+324)	
	vii)	FIWK	Foundation course on AI/ML and Workshop Fundamentals (a) Introduction to AI/ML (b)Workshop Practice [House Wiring/Fitting /Welding/Carpentry] [Any three from four] \$	50	50		100	3	9	12	432 (108+324)	
Academic elective	5	MTH1	Mathematics	80		20	100	3	1	4	144	
	6	BSPC	Basic Science [Physics + Chemistry]	70 [35 +35]	30 [15+ 15]		100 [50 +50]	4 [2 + 2]	2@ [1+ 1]	6 (4+ 2)	216 [144+ 72]	
Common	7	EDCA	Entrepreneurship Development & Computer Application	50 [25 + 25]	25	25	100 [50 + 50]	4 [2 + 2]	4 [1 + 3]	8 (3 + 5)	288 [108 + 180]	

Note 1

A Candidate shall have to appear all subjects in the Annual Examination of Class XI and have to pass at least 5 subjects to pass class XI as per below distribution:

- Both subjects of Language group (Paper1 & Paper2)
- Both Subjects of Vocational group (Paper3 & Paper4)
- Any one subject either from Academic Elective group or from Common group (i.e. any one paper from Paper5, Paper6 & Paper7). In case candidate passes in more than one subject then subject with highest marks will be considered for calculation of Grade.

Note 2: A candidate choosing a particular subject under Basic vocational subject will have to choose two or three Elective Papers (to be known as VP1, VP2, and VP3) in class XII from options corresponding to the same group as per table under Sl No IV

@Physics and Chemistry practical may be taken alternate week keeping continuous 2 periods for each lab.

\$ Workshop Practice [House Wiring/Fitting /Welding/Carpentry] [Any three from four]

CLASS-XII

Group	Code	Subject	Distribution of Marks				Distribution of Classes / Week			Total yearly classes
			Theory	Practical	Project	Total	Theory	Practical/ Project/ Tutorial	Total	
Language	1	BEN2/ HIN2/N EP2/U RD2	80	-	20	100	2	1	3	108
	2	ENG2	80	-	20	100	2	3(1+2*)	5	180
Vocational	3	Two Elective Subjects as prescribed under respective Skill Qualification File [to be selected from table under Sl no. IV i) Vocational Paper I[VP1] ii) Vocational Paper II[VP2]	30	50	20	100	3	4	7	252
	4		30	50	20	100	3	4	7	252
Compulsory Academic	5	MTH2	80	-	20	100	4	1	5	180
	6	PHYS/ CHEM	70	30	-	100	4	2	6	216
Optional Elective	7	CHEM/ PHYS Or VP3 One subject from Academic Electives [to be chosen from sl no. 2 or sl no 3 of list given below in table under Sl.No.III i.e. either PHYSICS or CHEMISTRY] [AE3] OR One Elective Subject as prescribed under Skill Qualification File [to be selected from table under Sl no. IV] [VP3]	70	30	-	100	4	2	6	216
			30	50	20	100	3	4	7	252
Common	8	ENST	80	-	20	100	2	-	2	72
							24/23	17/19	41/4 2	

(*) 2 Period are kept to develop the communication skill in English.

(**) The theory subject "Environmental Studies" [ENST] is compulsory for all the candidates only to generate awareness among the students. Evaluation will be taken place at the end of the year, but the obtained marks will not be considered for calculation of final marks.

Choice of Elective Papers (to be known as VP1, VP2 and VP3) is limited to the choice of basic vocational paper as selected in class XI, corresponding Skill Qualification File and as described in table under Sl no. IV

Note:

- Paper 7 is optional elective. A Candidate may or may not opt for it. Only if a Candidate opts for paper 7, marks scored will be displayed in final mark sheet.
- A Candidate shall have to appear at all subjects of Class XII and have to pass at least 5 subjects to pass class XII as per below distribution:

For student opting Paper 7	For student NOT opting Paper 7
<ul style="list-style-type: none"> - Both subjects of Language group (Paper1 & Paper2) - Both Subjects of Vocational group (Paper3 & Paper4) - Any one paper from Paper5, Paper6 and Paper 7 	<ul style="list-style-type: none"> - Both subjects of Language group (Paper1 & Paper2) - Both Subjects of Vocational group (Paper3 & Paper4) - Any one paper from Paper5, Paper6.

- In case candidate pass in more than one subjects among Paper 5, 6, and 7 (if opted), paper with highest marks will be considered for calculation of Final grades. Final Grades will be calculated based on the marks attained only in Class XII.

III. Academic Elective Subject Package:

For Class XII			
Sl No.	Subject Name	Subject code	Subject type
1.	Mathematics	MTH2	Compulsory Elective
2.	Physics	PHYS	Compulsory/Optional Elective
3.	Chemistry	CHEM	Compulsory/Optional Elective

IV. Different Vocational subject combinations available under Engineering & Technology [ET] discipline for Class XI and Class XII

SL	Discipline	Group Name & Code	Vocational Subjects for Class XI	Elective (Vocational) subject combinations available in Class XII	Name of the Skill Certificate after passing H.S.Vocational
1	ET	Building Construction & Maintenance (ETBC)	Foundation course on Civil [Basic Civil Theory + Workshop Practice] (FCWK)	1. Land Survey 2. Civil Construction & Maintenance 3. Estimation & Material testing for civil construction	Construction Technician (Civil)
2	ET	Automobile Technology (ETAT)	Foundation course on Mechanical & Automobile basics [Basic Mechanical Theory & Automobile + Workshop Practice] (FAWK)	1. General servicing of Automobiles 2. Repair and Maintenance of Automobile 3. Repair and Maintenance of Two Wheeler	Automobile Repair and Maintenance Technician
3	ET	Refrigeration & Air-Conditioning (ETRA)	Foundation course on Mechanical & Cooling system [Basic Mechanical Theory & Cooling System + Workshop Practice] (FMWK)	1. Repair and Maintenance of Refrigeration system 2. Repair and Maintenance of Air-conditioning system 3. Repair & Maintenance of Central air-conditioning system	Refrigeration and Air-conditioning service technician
4	ET	IT Infrastructure & Application (ETIT)	Foundation course on Computer Hardware & Security [Basic Computer Hardware & Security Theory + Workshop Practice] (FHWK)	6. Computer Maintenance & Networking 7. Web page Development 8. Database Management System 9. Visual Basic Programming 10. Python Programming Language	IT Infrastructure and Application Associate
5	ET	Electrical Maintenance & Installation (ETEM)	Foundation course on Electrical [Basic Electrical Theory + Workshop Practice] (FEWK)	1. Domestic Wiring and Motor Installation 2. Electrical Home Appliances servicing and Repair 3. Servicing of Electrical Distribution System in rural areas	Electrical Maintenance & Installation Technician

6	ET	Consumer Electronics (ETCE)	Foundation course on Electronics [Basic Electronics Theory + Workshop Practice] (FLWK)	1. Digital and Cable TV installation, testing & servicing 2. Water Purifier, Microwave Oven and Inverter Servicing 3. Mobile/Smart Phone Repair 4. Computer Maintenance & Networking	Consumer Electronics Appliance Technician
7	ET	Renewable Energy (ETRE)	Foundation course on Electrical [Basic Electrical Theory + Workshop Practice] (FEWK)	5. Solar PV Installation & Maintenance 6. Solar Thermal Installation & Maintenance 7. Electric Vehicle (EV) Charging Station Operation and Maintenance 8. Electric Vehicle (EV) Battery Management System 9. EV 3 wheeler fast hybrid charging station (Solar PV and electricity grid)	Renewable Energy Integration Technician
8	ET	AI/ML (ETAM)	Foundation course on AI/ML [Introduction to AI/ML + Workshop Practice] (FEWK)	To be notified later	To be notified later

Vocational Training Centers (VTC) have the flexibility to select a minimum of two and a maximum of three papers from the available elective options. These selected papers will be referred to as Vocational Papers.

The selection of the 7th paper can either be one of the chosen electives (if the VTC selects three elective options) or an academic elective (if the VTC chooses two elective options).

Annexure F**Entrepreneurship Development & Computer Application****Class XI**

Total no. Of weeks for Classes / Year: 36		
Classes per week : 8	Th = 4	Practical/Project = 4
Total classes per year : 288	Th = 144	Practical/Project = 144
Total marks : 100	Th = 50	Practical = 25 Project = 25

Course contents:**Group A (Entrepreneurship Development)**

Theory (25 Marks, 72 Classes) Project (25 Marks, 36 classes)

(Theory – 25 Marks, 72 Classes)**Module I: Overview and definition of Entrepreneurship [Classes – 6]**

Content: Definition of Entrepreneurship

Definition of Entrepreneur

Qualities of an Entrepreneur

Creativity and Risk taking

Module II: Basic forms of Small Business [Period – 14]

Content: 1. Sole Proprietorship – Advantages & disadvantages

2. Partnership – Advantages & disadvantages

3. Corporations– Advantages & disadvantages

4. Special forms of business –

(i) Franchises (Home based and Web based) , (ii) Self-help Group

5. Reasons for success / failure of small business

Module III: Legal Requirements for starting a small business [Period – 16]

Content: 1. Government Policies

2. Government incentives to small businesses

3. Licensing

4. Clearance from Pollution Control Board

5. Others

Module IV: Managerial Requirements for starting a small business [Period 22]

Content: 1. Planning

2. Financing

3. Marketing

4. Human Resource Development

5. Accounting

Module V: Contents of a Project Report for starting a Business [Period – 14]

1. Name of the Applicant

2. Address of Communication

3. Name of the Proposed Enterprise (If Decided)

4. Proposed Location of Enterprise

5. Category of Enterprise

(i) Micro (ii) Small (iii) Medium

6. Nature of Activity

(i) Manufacture (ii) Service

7. Nature of Operation

(i) Perennial (ii) Seasonal (iii) Casual

8. Type of Organisation

(i) Proprietary (ii) Partnership (iii) Self-help Groups (iv) Others

9. (a) Main Manufacturing /Service Activity

(b) Products to Be Manufactured /Service to Be Provided

10. (a) Proposed Investment In Fixed Assets [Rupees InLakh]

11. Installed Capacity (Proposed) per Annum

(i) Quantity (ii) Unit

12. Power Load (Anticipated)

13. Other Sources of Energy/Power

14. Expected Employment

15. Expected Schedule of Commencement of Production/Activity

16. Entrepreneurs' Profile:

(i) Name (ii) Gender (iii) Community (iv) Knowledge Level

Entrepreneurship Development (PROJECT)

PROJECT – 25 Marks, 36 Classes

Entrepreneurship Readiness Questionnaire [Classes – 8, Marks – 5]

1. Every student should exercise the “Entrepreneurship Readiness Questionnaire” to assess the Entrepreneurial Potential in him.

The assessment is to be made by the student himself or herself, and is required to be ratified by the subject teacher.

Purpose:

This exercise is intended to assess the subtle qualities of a student. Not everyone is cut out to be an Entrepreneur. The fact is, there are certain traits, however, that seem to separate those who will be successful as entrepreneurs from those who may not be. This questionnaire will help to determine in which category a student fits better.

Each student is required to put a tick (√) mark for each question which best describes his/her traits.

Markings:

For Question numbers 01,02,06,08,10,11,16,17,21,22,23

One mark for each tick mark is to be awarded to a student if his/her responses to these questions fall under “Agree Completely” and “Mostly Agree”. No marks will be awarded for this group of questions if the responses fall under “Partially Agree”, “Mostly Disagree” or “Disagree Completely”.

For Question numbers 03,04,05,07,09,12,13,14,15,18,19,20,24,25

One mark for each tick mark is to be awarded to a student if his/her responses to these questions fall under “Mostly Disagree” and “Disagree Completely”. No marks will be awarded for this group of questions if the responses fall under “Agree Completely”, “Mostly Agree” or “Partially Agree”.

Ques No.	The Question	Agree Completely	Mostly Agree	Partially Agree	Mostly Disagree	Disagree Completely
1	I am generally optimistic					
2	I enjoy competition and always try to do things better than my competitor					
3	In solving a problem, I always try to get the best solution first and do not worry about other solutions of the problem.					
4	I enjoy association of my friends after school hours and attending local club every evening.					
5	If I am asked to bet for an event, I try to bet in in favour of that outcome which may earn maximum profit for me					
6	I like setting my own goals and working hard to achieve them					
7	I am generally casual and do not take anything seriously					
8	In taking action for any event, I first like to know what is going on in that event: that is I do not take any action without having strong idea on that event.					
9	I work best under the guidance of someone else					
10	I can convince others, if I am in right position					
11	I find that other people/ friends frequently waste my time					
12	I enjoy watching football, cricket and other sports events					
13	I tend to communicate about myself openly with other people					
14	I do not mind following orders from any person, elder or younger, who has authority to order me (e.g. to follow the order of the captain of your school team, to which you are also a member, and the captain may be older than or younger to you)					
15	I enjoy more in planning things and less in executing plans					
16	I do not like to bet on any event that has more chance to occur					

Ques No.	The Question	Agree Completely	Mostly Agree	Partially Agree	Mostly Disagree	Disagree Completely
17	If my attempt to any action fails, I quickly shift to something else and do not stick to the failed action					
18	To become successful in business, I think enough time should be kept reserved for my family members/friends					
19	When I earn some money, I do not use it for unnecessary causes, rather I keep it secured for use in future emergencies					
20	I think that making a lot of money is a turning point in life					
21	If a problem has a number of alternatives, solving that problem becomes more effective					
22	I enjoy impressing others with the things that I can do very well					
23	I enjoy playing carom, chess, badminton, cards etc. with a person/friend who plays better than me					
24	In business dealings, I think moral ethics of a person must be bent a little to get things done					
25	I think that good friends always make another good					

RESULT:**YOUR SCORE YOUR ENTREPRENEURIAL POTENTIAL**

21 – 25 You have great entrepreneurial potential

16 – 20 You could be quite successful entrepreneur if your other talents and resources are right

11 – 15 You are in transitional range. With some serious work you can probably develop the outlook you need for running your own business

06 - 10 Your entrepreneurial potential is doubtful. It would take considerable re-arrangement of your life philosophy and behavior to make it

00 – 05 Entrepreneurship is not really for you.

**2. Make a Detailed business Plan highlighting all the components of a Business Report.
(Classes -20, Marks - 15)****Purpose:**

Developing a business plan helps students understand a business's purpose and direction (by identifying vision, mission and goals). They will learn how to research and analyze target market, competitors, and industry trends. They will understand how business will generate revenue, manage expenses, and achieve profitability (by preparing income statement, balance sheet and cash flow statement). Identifying potential risks and challenges will develop skills for risk management. Students will learn operational efficiency (processes, workflows, and production schedules). Overall, creating a business plan enhances business acumen of students, helping them become a more informed or effective entrepreneur or business leader.

Here a step-by-step guide what a student should do when preparing a business plan:

- Executive Summary (summary of business idea, mission, and vision)
- Business Description (overview of business, i.e., name, location, structure of the business)
- Market Analysis (conduct research to understand your target market, competition and business trends)
- Products or services (your offering in detail, features, benefits, unique selling points etc.)
- Marketing and sales strategy (outline your price, promotion and place)
- Financial projections (income statement, cash flow statement, Balance Sheet)
- Funding (sources of fund, bank, such as, venture capital, business incubators, angel investors, govt. Grants etc.)

3. Visit the owner of a small business in your locality. Collect data/information from the business person with regard to the following points [Classes - 8, Marks - 5]

1. Type of business
2. Type of customers (e.g. for business dealing with educational stationery, customers are mainly school and college students etc.)
3. Sources of raw materials
4. Monthly / annual sales (approximate figures)
5. Monthly / annual profit (approximate figures)
6. Threats to the business (like funding, nearest competitor, obsolescence of the product etc.)
7. Opportunities to the business
8. Future plans

OR

3. Collect the story of a successful entrepreneur from magazines, journals or through internet. Read his/her success stories and write an essay on the fact highlighting following points [8 Classes, 5 Marks]

1. What motivated the person to start his/her own business?
2. How the entrepreneur selected the type of business?
3. What were the obstacles the entrepreneur faced at the beginning?
4. How the entrepreneur overcame the obstacles?
5. What you learnt from the story?

You can take the examples of Great Indian Entrepreneurs from internet by searching

1. Successful Indian Entrepreneurs
2. Success stories of small entrepreneurs
3. Successful Woman Entrepreneurs and so on

Group B (Computer Applications)

Theory (25 Marks, 72 Classes) Practical (25 Marks, 108 pds)

Unit 1: Fundamental of Computer (Theory - 24 Classes, Practical – 24 Classes)	
Theory (24 Classes)	Practical (24 Classes)
<ol style="list-style-type: none"> 1. Illustrate development history of Computer and its present-day application areas. 2. Identify the different Components of a computer. 3. Computer Organization 4. Block Diagram of a Computer 5. Central Processing Unit: CU, ALU 6. The Bus: Data and Address Bus <p>Input Devices</p> <ol style="list-style-type: none"> 7. Keyboard, Mouse, Scanner, OMR, OCR, Barcode Reader, Joystick, Light Pen <p>Output Devices</p> <ol style="list-style-type: none"> 8. Monitor, Printer, Plotter 9. Computer Memory 10. Cache, Primary , Secondary Memory 11. Associate different Tools / equipment used for assembling / disassembling a PC. 12. Understand the various types of power flows inside a computer. 13. Identify and functionalities of SMPS & UPS, Install SMPS. 	<ol style="list-style-type: none"> 1. Identify the different Components of a computer. 2. Associate different Tools / equipment used for assembling / disassembling a PC. 3. Understand the various types of power flows inside a computer. 4. Identify and functionalities of SMPS & UPS, Install SMPS. 5. Know about the booting process. Install OS Windows/ Linux. 6. Starting and Shutting down Windows(MS Windows 2007 or higher) 7. Working with Taskbar, Control Panel and Desktop Icons 8. Changing Desktop Background 9. Locking or Unlocking, Hiding or Unhiding Taskbar 10. Working with Windows Search and Help 11. Working with Windows Libraries and Windows Explorer 12. Managing Files and Folders 13. Working with Windows Accessories

<p>14 Know about the booting process. 15 Install OS Windows/ Linux. 16 MS DOS : Popular Internal and External Commands only</p> <p>Number Systems 17. Concept of positional Number System: Decimal, Binary, Octal and Hexadecimal Number Systems 18. Conversion: Inter-conversion between Decimal, Binary, Octal and Hexadecimal numbers</p>		
Unit 2: Office Automation Package (Theory 24 Classes, Practical – 60 Classes)		
<p><u>MS WORD (Theory – 8 pds, Practical – 20 pds):</u></p> <p>Introduction to Microsoft Word - Overview of Microsoft Word's Purpose and Features - Navigating the User Interface: Ribbons, Tabs, and Menus - Creating and Saving a New Document, Printing a document - Using Keyboard Shortcuts for Efficiency</p> <p>Basic Text Formatting - Text Selection Techniques: Click, Drag, and Shift - Font Formatting: Typeface, Size, Bold, Italics, Underline - Paragraph Formatting: Alignment, Line Spacing, Indentation - Applying Bullets and Numbering</p> <p>Document Formatting and Styles - Page Setup: Margins, Page Orientation, Page Size - Adding Headers and Footers - Introduction to Styles: Applying and Modifying</p>	<p><u>MS EXCEL (Theory – 8 pds, Practical – 20 pds):</u></p> <p>Introduction to Microsoft Excel - Overview of Excel's Role in Data Management - Understanding Workbooks, Worksheets, and Cells - Navigating the Excel Interface: Ribbons, Tabs, and Menus - Creating and Saving a New Workbook, Printing a worksheet/selection of it.</p> <p>Data Entry and Basic Formatting - Inputting Data: Text, Numbers, Dates - Introduction to Basic Formatting: Font, Alignment - Applying Cell Borders and Background Colors - Using AutoFill and Flash Fill Techniques</p> <p>Basic Formulas and Functions - Understanding Formulas and Functions - Basic Arithmetic Operators (+, -, *, /) - Introduction to SUM, AVERAGE, COUNT Functions - Using AutoSum for Quick Totals</p>	<p><u>MS POWER POINT (Theory – 8 pds, Practical – 20 pds):</u></p> <p>Introduction to Microsoft PowerPoint - Overview of PowerPoint's Role in Presentation Design - Navigating the PowerPoint Interface: Ribbons, Tabs, and Menus - Creating a New Presentation: Blank vs. Templates - Saving and Naming Presentation Files</p> <p>Slide Basics and Text Entry - Adding and Deleting Slides - Slide Layouts and Choosing the Right Layout - Text Box Creation and Text Entry - Basic Text Formatting: Font, Size, Alignment</p> <p>Slide Design and Themes - Applying Themes for Consistent Design - Customizing Theme Colors and Fonts - Background Styles and Slide Master View</p>

<p>- Creating a Table of Contents using Styles</p> <p>Inserting and Formatting Objects</p> <ul style="list-style-type: none"> - Inserting Images and Graphics - Resizing, Moving, and Aligning Objects - Working with Text Boxes and WordArt - Applying Borders and Shading to Objects <p>Tables and Columns</p> <ul style="list-style-type: none"> - Creating and Formatting Tables - Adding and Deleting Rows and Columns - Merging and Splitting Cells - Creating Multiple Columns in a Document <p>Page Layout and Section Breaks</p> <ul style="list-style-type: none"> - Inserting Page Breaks and Section Breaks - Customizing Headers and Footers for Different Sections - Using Columns for Newsletter-style Layouts - Page Numbering and Page Number Formats <p>Advanced Formatting Techniques</p> <ul style="list-style-type: none"> - Applying Themes and Style Sets - Inserting and Formatting SmartArt Graphics - Using Text Effects and WordArt Styles - Utilizing Text Boxes for Advanced Layouts 	<p>Cell References and Formulas**</p> <ul style="list-style-type: none"> - Working with Cell References: Relative and Absolute - Writing Formulas for Basic Calculations - Copying Formulas Across Cells - Error Handling: Dealing with #VALUE!, #DIV/0!, etc. <p>Data Formatting and Conditional Formatting</p> <ul style="list-style-type: none"> - Formatting Numbers, Dates, and Text - Applying Conditional Formatting Rules - Highlighting Cells Based on Conditions - Creating Data Bars and Color Scales <p>Sorting and Filtering Data</p> <ul style="list-style-type: none"> - Sorting Data in Ascending and Descending Order - Applying Custom Sort Orders - Using AutoFilter for Data Filtering - Applying Multiple Filters <p>Introduction to Charts and Graphs</p> <ul style="list-style-type: none"> - Creating Column, Bar, and Line Charts - Formatting Charts: Titles, Axes, Legends - Adding Data Labels and Data Tables - Modifying Chart Styles and Colors 	<p>- Using Slide Master for Global Changes</p> <p>Inserting and Formatting Objects</p> <ul style="list-style-type: none"> - Inserting Images, Shapes, and Icons - Resizing and Aligning Objects - Formatting Objects: Fill, Outline, Effects - Arranging and Grouping Objects <p>Working with Charts and Graphs</p> <ul style="list-style-type: none"> - Creating Bar, Line, and Pie Charts - Importing Data and Editing Chart Data - Formatting Charts: Labels, Axes, Legends - Animating Charts and Data Series <p>Multimedia Integration</p> <ul style="list-style-type: none"> - Adding Audio and Video to Slides - Editing Media Playback Options - Setting Slide Transitions and Timings - Using Animation Effects for Media <p>Slide Transitions and Animation</p> <ul style="list-style-type: none"> - Applying Slide Transitions - Customizing Transition Effects and Timings - Animating Text and Objects on Slides - Using Animation Pane for Precise Control
---	--	--

<p>Mail Merge</p> <ul style="list-style-type: none"> - Creating a Mail Merge Document - Connecting to Data Sources: Excel, Outlook, etc. - Inserting Merge Fields and Previewing Results - Completing and Printing the Merged Documents <p>Productivity</p> <ul style="list-style-type: none"> - Using AutoCorrect and AutoText for Efficiency 	<p>Introduction to PivotTables</p> <ul style="list-style-type: none"> - Understanding PivotTables and Their Advantages - Creating a Basic PivotTable - Arranging Fields: Rows, Columns, Values - Summarizing Data with PivotTables 	<p>Tips for Effective Presentation</p> <ul style="list-style-type: none"> - Design Principles for Effective Slides - Font and Color Selection for Readability - Rehearsing Timings and Delivering Presentations
<p>Unit 3: Internet and Cybersecurity Basics (Theory - 24 pds, Practical – 24 pds)</p>		
<p>Introduction to Internet and Cybersecurity</p> <ul style="list-style-type: none"> - Understanding the Importance of Cybersecurity - Overview of Internet and Its Impact - Basic Terminology: Cybersecurity, Hacking, Malware <p>Fundamentals of Networking</p> <ul style="list-style-type: none"> - Introduction to Computer Networks - Types of Networks: LAN, WAN, Internet - IP Addresses, DNS, and URL Structure <p>Internet Protocols and Safe Browsing</p> <ul style="list-style-type: none"> - Basics of HTTP and HTTPS - Secure Browsing Practices: URL Verification - Using HTTPS and SSL for Encryption <p>Passwords and Authentication</p> <ul style="list-style-type: none"> - Importance of Strong Passwords - Multi-Factor Authentication (MFA) - Basic Tips for Secure Authentication <p>Malware and Cyber Threats</p> <ul style="list-style-type: none"> - Introduction to Malware: Virus, Worm, Trojan - Recognizing Phishing and Social Engineering - Best Practices to Avoid Malicious Software <p>Online Privacy and Social Media Security</p> <ul style="list-style-type: none"> - Protecting Personal Information Online - Privacy Settings on Social Media Platforms - Risks of Oversharing and Geotagging <p>Mobile Device Security</p> <ul style="list-style-type: none"> - Mobile Threats and Safe App Downloads - Securing Smartphones and Tablets - Using Device Locks and Encryption 		

Email Security and Safe Online Transactions

- Recognizing Suspicious Emails and Attachments
- Secure Online Payment Methods
- Verifying HTTPS and SSL Certificates
- Carry out Online financial transactions, safely and securely

Cybersecurity Best Practices

- Importance of Regular Software Updates
- Data Backup and Recovery Basics
- Tips for Safer Online Behavior

Introduction to Cyber Laws and Regulations

- Overview of Cybersecurity Laws and Regulations
- Data Protection and Privacy Laws
- Consequences of Cybercrime